IEI Technology Corp.

IMK-571R Software and Programming Guides

IMK Runtime DEMO User Guide, XML Merchandise Manager User Guide, and MSR Programming Guide

User Manual

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RoHS Lead Free

Revision

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Chapter

1

Windows CE Setup

1.1 Start up and Shut down

1.1.1 Start up

Windows CE starts automatically when the system is turned on.

The initial screen shows for 30 seconds while loading Windows CE 5.0. The startup image can be changed by overwriting the default "logo.bmp" with a customized one. Ideal resolution is 640 x 480 pixels, with 65536 colors in bitmap format.

Figure 1–1: Windows Splash Screen

Figure 1–2: Desktop

If the progress bar stalls and the system does not boot, please check in the following order.

Step 1: Check SD card is installed correctly

Step 2: Check SD card is formatted with FAT16

Step 3: Check SD card contents are formatted correctly

Step 4: The OS image NK.bin should be on the SD card and not be crashed

Step 5: If the OS image is crashed, prepare a new SD card with the same contents

Step 6: Contact technical support

1.1.2 Shut down

The SD card will be damaged if it is removed, or the system is turned off while the card is being accessed. To shutdown just turn off the device when the SD card is not being accessed.

NOTE: Always save your work before turning off the system.

1.2 List of Functions

1.2.1 List of Window CE applications and services

There are a range of programs that can be included on a Windows CE installation. The fewer programs that are included, the faster Windows will run.

Services	Descriptions
RDP client	Remote desktop connection client program. Corresponds to a password preservation function and auto logon.
Internet Explorer	Web browser Menu bar, status bar and button bar can be removed for true full-screen display. Can be set as the exclusive interface for Web browser-only machines. When installed, Internet option is added, and screen functions can be toggled. <Cash Location> RAM Drive
SIP (Software- based Input Panel)	The larger size onscreen keyboard. It is accessible using the icon in the system tray.
Media Player	Windows Media Player
File Viewers	Microsoft® Excel Spreadsheet Viewer Microsoft® Word Document Viewer Microsoft® PowerPoint Presentation Viewer Microsoft® Image Viewer Microsoft® PDF Viewer
WordPad text editor	Simple word processor
ActiveSync	Synchronizes data between a desktop and Windows CE device. This device supports ActiveSync 3.5 and up.
MFC (Microsoft® Foundation Classes)	A framework for building applications, COM components and controls.

Services	Descriptions
Active Template Library (ATL)	A C++ template library for creating small, fast Microsoft® ActiveX® servers.
C Libraries and Run-times	All C libraries and run-times for Windows CE
Component Services (COM and DCOM)	An operating system-independent, object-oriented system for creating binary software components that interact with other COM-based components in the same process space, in other processes, or on remote machines. Three levels of run-time support are available.
Standard Win32 SDK for Windows CE	Software Development Kit with common baseline Windows CE technologies for easily porting applications
WinSock 2.0	Winsock handles input/output requests for Internet applications in Windows. Winsock runs between an application program such as a browser and the Internet program that uses TCP/IP.
Windows Networking API	Manages network connections and accesses remote file systems and printers.
TCP/IP	Offers network sharing resources including IP, ARP, ICMP, IGMP, TCP and UDP. Also supports DHCP and includes helper APIs for easy access.
XML services and support	Supports Microsoft XML version 3.0 Service Pack 1
File system and data store registry settings	The file system and data store are called the object store. The object store consists of a file system, database, and system registry that share a single memory heap. It provides persistent storage for applications and their data even when the main power supply is lost. The object store can be up to 256 MB of compressible, nonvolatile, RAM storage. It integrates the read-only files that are stored in ROM with the read/write files of both an application and a user.
NET Compact Framework	A runtime environment for easier program development

Services	Descriptions
WBT (Windows based Terminal)	Available on RDP client's terminal. Acts in the same manner as password preservation and auto-logon. * Explorer shell cannot be used with this
FTP Server	Allows the device to become an FTP server
HTTP Server	Allows remote systems to monitor, configure or control the system through HTTP on a web browser.
Telnet Server	After installation, this device can administered remotely using a telnet client
VNC Server	Allows another computer to "see" the devices screen on their desktop and use their mouse and keyboard to control it
DOS prompt and Shell	The shell provides the user with an interface to the objects necessary for running applications and managing the Microsoft® Windows® CE operating system on a target device. These can be real objects on the target device, such as files and folders; virtual objects, such as the Recycle Bin; or remote objects accessed through a network.

1.2.2 List of Control Panel

Icons	Details	Save Registry after execution	Power reset after execution
Certificates	Set up certificates	Required	Required
Date/Time	Set the date and time	Required	Required
Device Management	Set Device Management	Required	Required
Dialing	Set up dials	Required	Required
Display	Set up panel display *Set up other items related to display such as wallpaper	Required	Not Required
Input Panel	Setting input panel	Not Required	Required

Icons	Details	Save Registry after execution	Power reset after execution
Internet Option	Set Internet options	Required	Required
Keyboard	Set up keyboard	Required	Required
Mouse	Set up mouse	Required	Required
Network and Dial-up Connection	Set up network environment	Not Required	Required
Owner	Set up the owner's information	Required	Required
Password	Set up or change password	Not Required	Required
PC Connection	Set up connecting computers	Required	Required
Regional Settings	Select the regional settings	Required	Required
Remove Programs	Delete installed applications. * Need to save its registry except Digital's program. * Required to restart when uninstalling.	Not Required	Required
Stylus	Set up touch panel. * Set up calibration here.	Required	Not Required
System	Set up allocation of a memory and device name.	Required	Not Required
Volume & Sounds	Control volume and sound. * Should set up touch sounds or click sounds in here.	Required	Not Required

1.3 Control Panel Settings

All the device settings are changed through the control panel.

Step 1: Click on **Start**.

Step 2: From the Start menu, select **Settings**.

Step 3: Then select **Control Panel**.

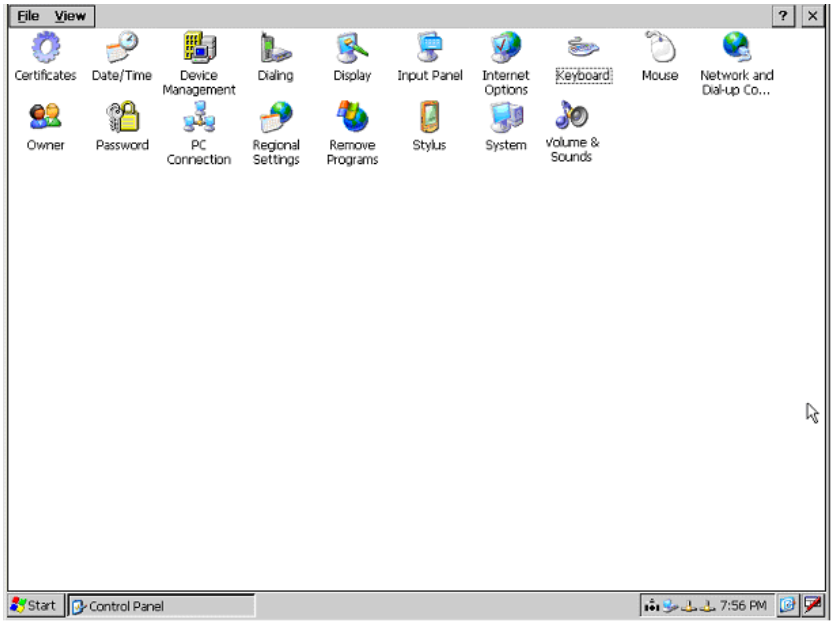


Figure 1–3: Control Panel

Step 4: Make any required changes.

Step 5: Select "Start->Programs->Save Registry" to save any changes. If not saved to the registry, the changes will revert back after a system restart.

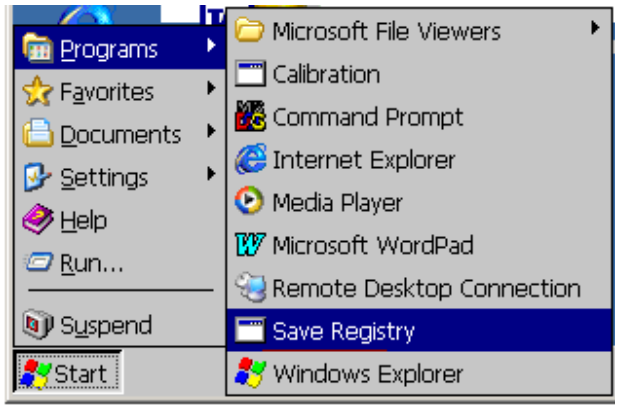


Figure 1–4: Save Registry

1.3.1 Stylus

Calibrate the touch screen to ensure that input using the stylus is correct.

Step 1: Double click the **Stylus** icon on the Control Panel or [Start] -> [Programs] -> [Calibration]

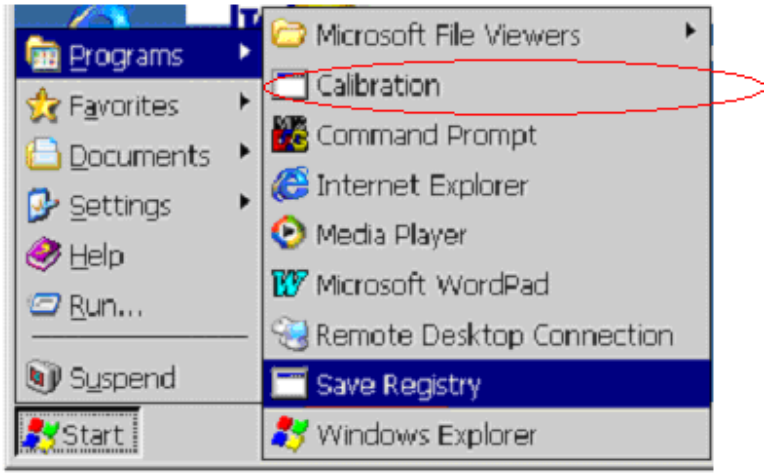


Figure 1–5: Touch Screen Calibration

Step 2: Select the **Stylus** tab.

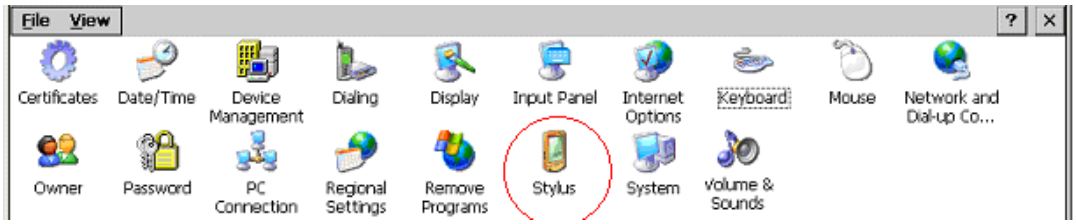


Figure 1–6: Control Panel

Step 3: Click Recalibrate.

Step 4: Click on and hold the **+** mark at the center of the screen. When the coordinates are recognized, the + mark will move in order from the center to the top left, bottom left, bottom right, and top right. Click on and hold the + mark at each point.

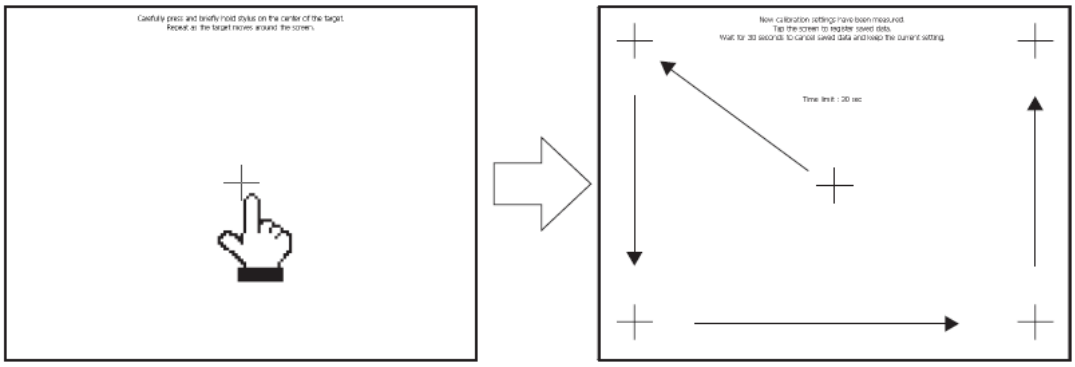


Figure 1–7: Touch Screen Calibration

1.3.2 Network

To connect to a wired network through the Ethernet cable, do the following.

Step 1: Double click the **Network and Dial-up Connections** icon on the Control Panel.

Step 2: Double click the **DM9CE1** icon.

Step 3: Set the IP address and Name Server in accordance with your network environment (ask your network administrator for details).

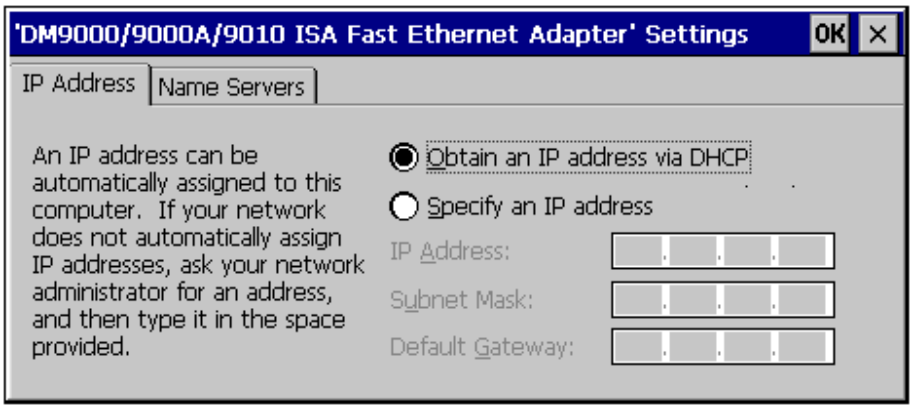

'DM9000/9000A/9010 ISA Fast Ethernet Adapter' Settings
OK
IP Address
Name Servers
An IP address can be automatically assigned to this computer. If your network does not automatically assign IP addresses, ask your network administrator for an address, and then type it in the space provided.
Obtain an IP address via DHCP
Specify an IP address
IP Address:
Subnet Mask:
Default Gateway:

Figure 1–8: IP Address Selection

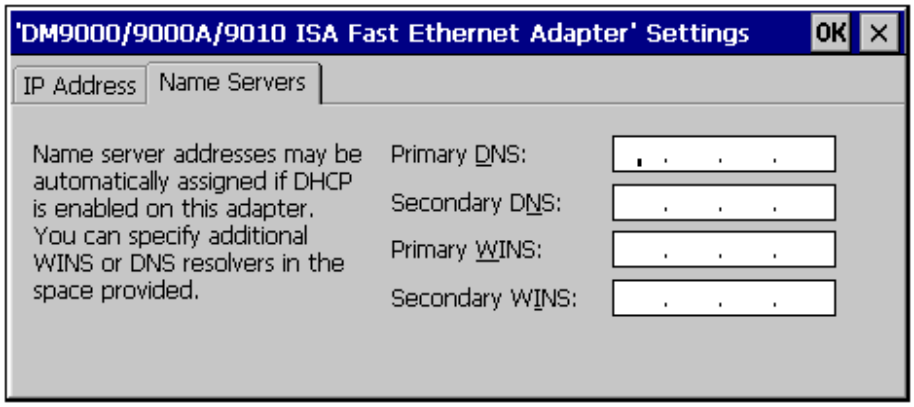

'DM9000/9000A/9010 ISA Fast Ethernet Adapter' Settings
OK
IP Address
Name Servers
Name server addresses may be automatically assigned if DHCP is enabled on this adapter. You can specify additional WINS or DNS resolvers in the space provided.
Primary DNS:
Secondary DNS:
Primary WINS:
Secondary WINS:

Figure 1–9: Name Server Selection

Step 4: Before running Internet Explorer, make sure the network cables are attached and verify the network is connected.

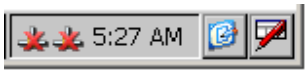


Figure 1–10: Network Not Ready

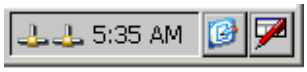


Figure 1–11: Network Ready

Step 5: If the network does not become ready, double-click the icon of the non-connected network.

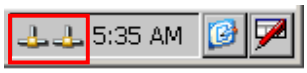


Figure 1–12: Network Icons

Step 6: Click the renew button to try to refresh the network status.

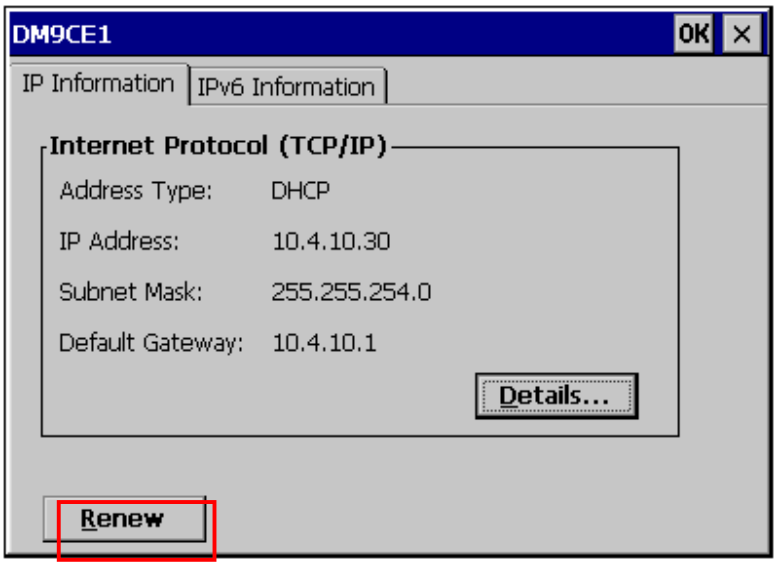


Figure 1–13: Renew Network Status

Step 7: If the system is unable to connect to a network, the following message is displayed. Click OK to close the message window.

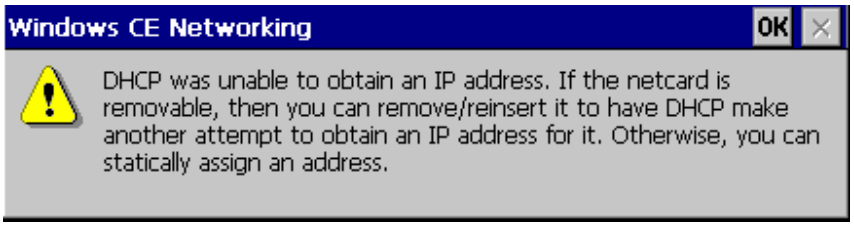

Windows CE Networking
OK
DHCP was unable to obtain an IP address. If the netcard is removable, then you can remove/reinsert it to have DHCP make another attempt to obtain an IP address for it. Otherwise, you can statically assign an address.

Figure 1–14: DHCP Warning

Step 8: If the original IP has not been used for a while, it might not work any more. If all other settings are correct then the old IP needs to be removed from the registry. Clicking "Save Registry" saves these settings and should make connection quicker the next time.

1.3.3 Volume & Sounds

Change the volume and the system sounds.

Step 1: Double click the **Volume & Sounds** icon on the Control Panel.

Step 2: Click the **Volume** tab. next, set the [Enable sounds for:] to either ON or OFF.

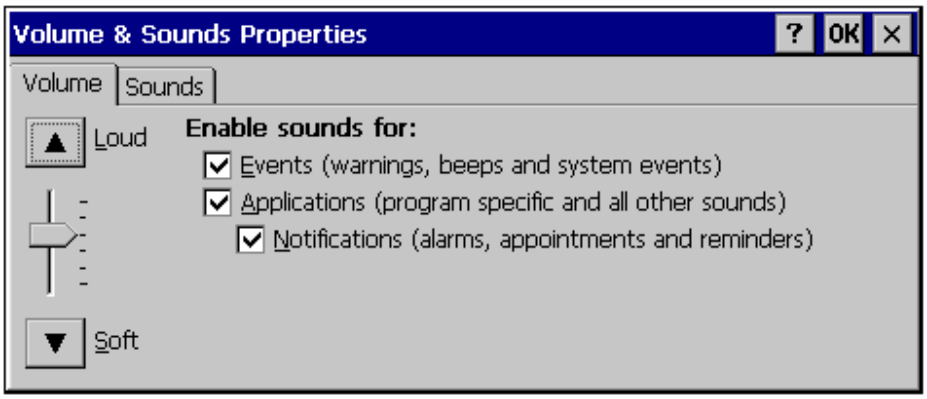


Figure 1–15: Volume & Sounds Properties

1.3.4 Keyboard

Set the properties of the keyboard.

Step 1: Double click the **Keyboard** icon on the Control Panel.

Step 2: Select the **Repeat** tab.

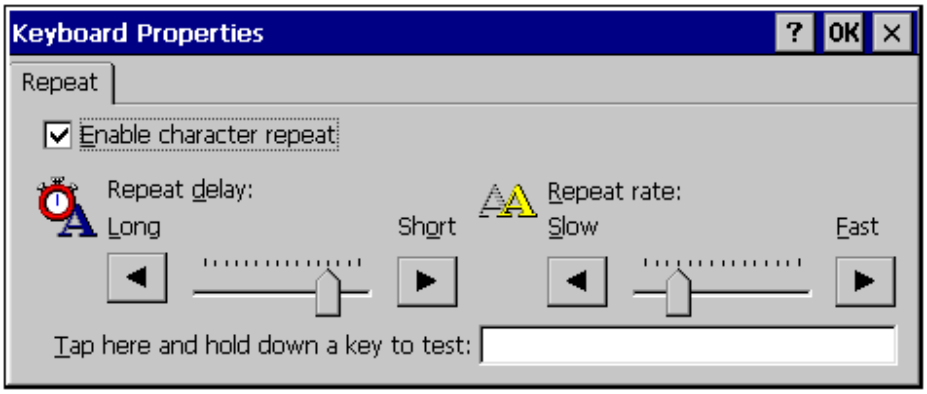


Figure 1–16: Keyboard Properties

1.3.5 System

Change the system settings.

Step 1: Double click the **System** icon on the Control Panel or [Start] -> [Programs] -> [System]]

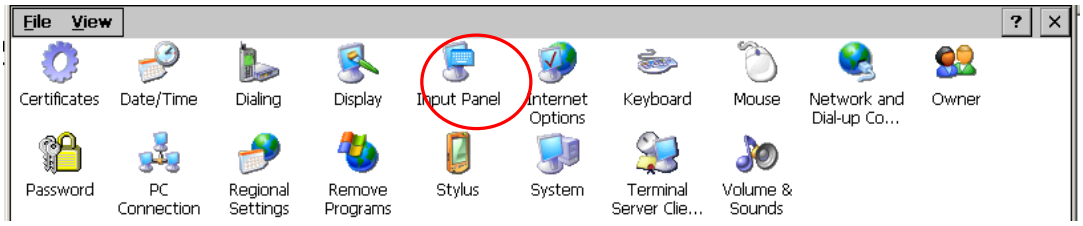


Figure 1–17: Control Panel

Step 2: **General:** shows the system information.

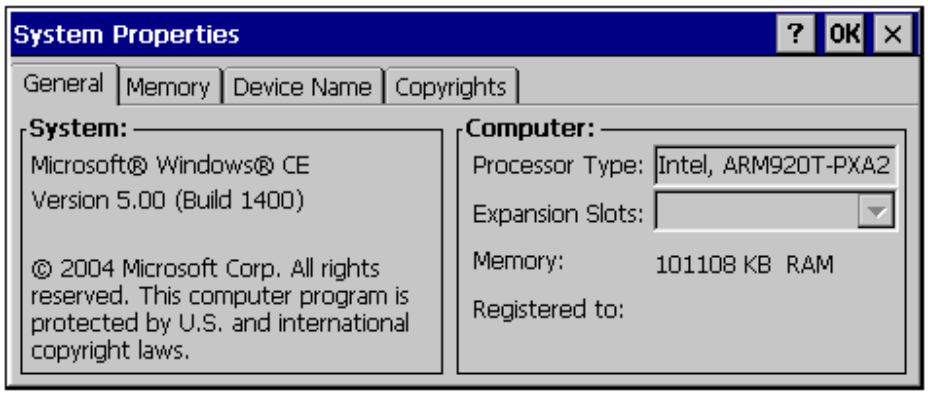


Figure 1–18: System Properties

Step 3: **Memory:** move the slider to the left for more memory to run programs. Move slider to the right for more storage. Only unused RAM can be adjusted.

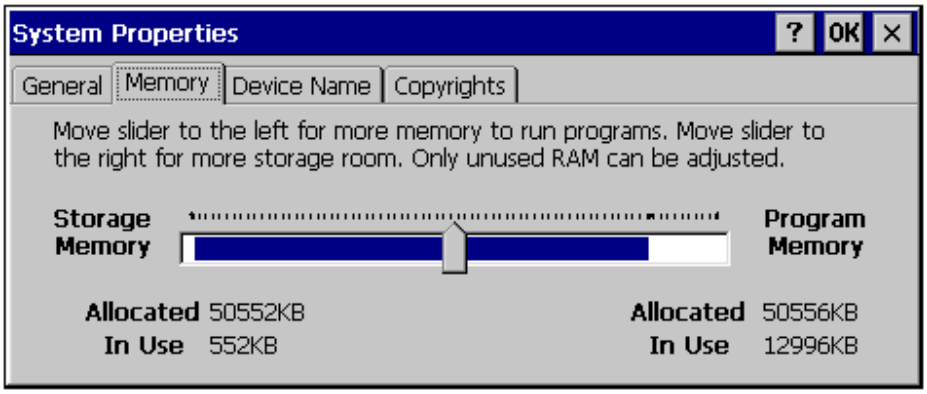


Figure 1–19: Memory Properties

Step 4: **Device Name:** These setting are used to identify your Windows CE device to other computers. Please type a name and a short description.

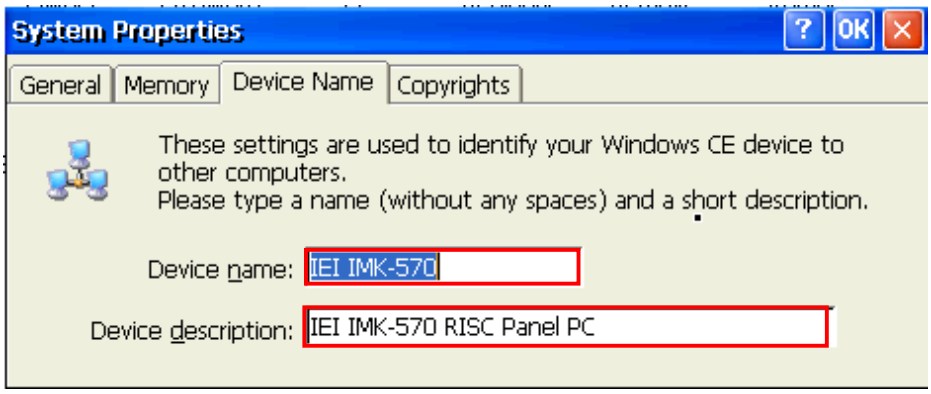


Figure 1–20: Device Name

Step 5: **Copyrights:** displays the copyrights for the operating system.

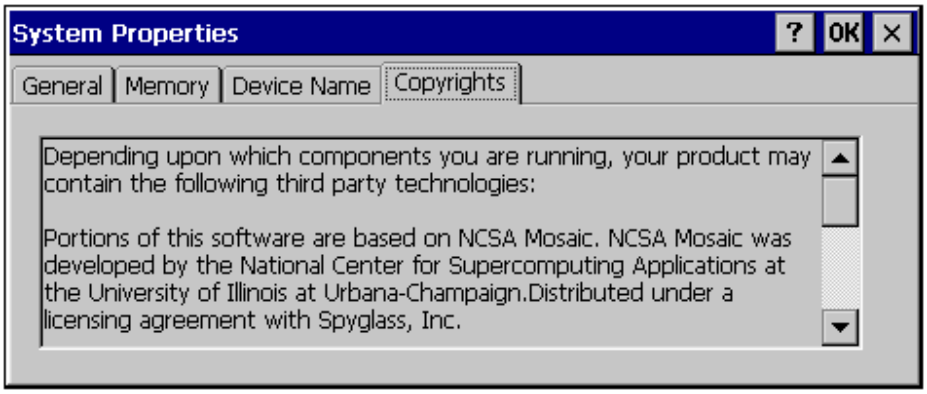

System Properties
OK
General
Memory
Device Name
Copyrights
Depending upon which components you are running, your product may contain the following third party technologies:
Portions of this software are based on NCSA Mosaic. NCSA Mosaic was developed by the National Center for Supercomputing Applications at the University of Illinois at Urbana-Champaign.Distributed under a licensing agreement with Spyglass, Inc.

Figure 1–21: Copyrights

1.4 Built-in User Applications of Windows CE 5.0

The built-in applications are shown on the desktop or in the start menu.

Figure 1–22: Desktop

1.4.1 Internet Explorer

How to use Internet Explorer.

Step 1: Open Internet Explorer.

Figure 1–23: Internet Explorer Icon

Step 2: Enter the website address (URL).

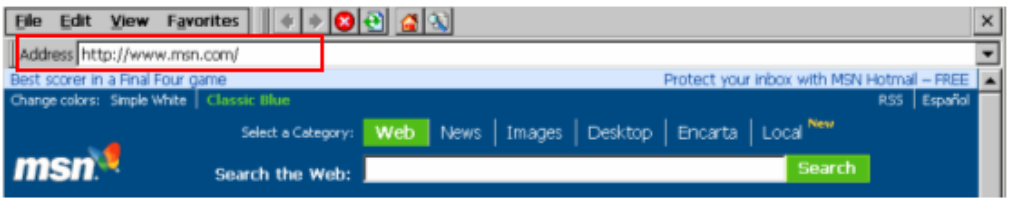

File Edit View Favorites
Address http://www.msn.com/
Best scorer in a Final Four game
Protect your inbox with MSN Hotmail – FREE
Change colors: Simple White Classic Blue
RSS Español
Select a Category: Web News Images Desktop Encarta Local New
msn
Search the Web:
Search

Figure 1–24: Website URL

Common functions on the toolbar.

Step 3: **File**: [Open], [Save As…], [Print], [Page Setup…], [Work Offline] functions.

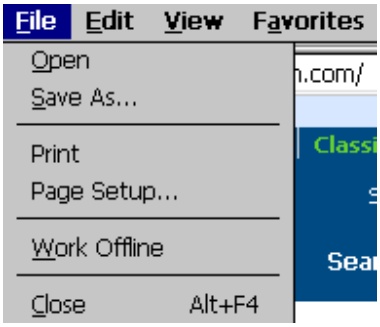


Figure 1–25: Internet Explorer File Menu

Step 4: **Edit**: [Cut], [Copy], [Paste], [Select All], [Find] functions to edit the context of the current page.

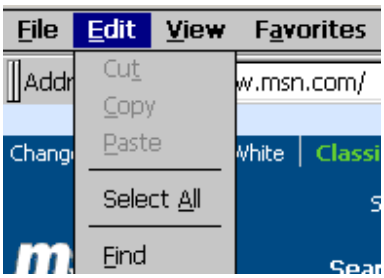


Figure 1–26: Internet Explorer Edit Menu

Step 5: **View:** sets the view of the current page. There are further settings in Internet Options.

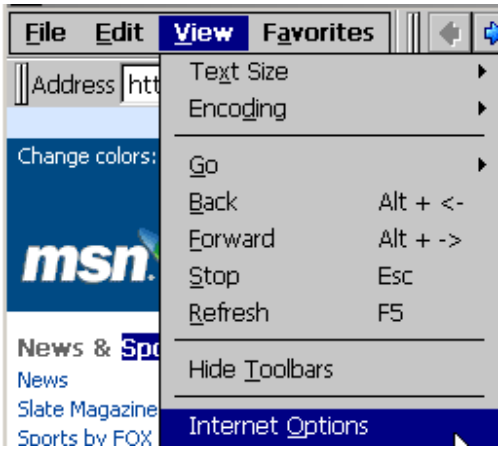


Figure 1–27: Internet Explorer View Menu

Step 6: **Favorites**: keeps track of favorite sites and allows them to be retrieved easily.

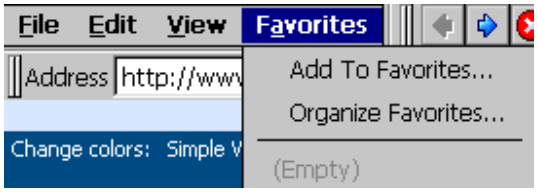


Figure 1–28: Internet Explorer Favorites Menu

1.4.2 Set up a Remote Desktop Connection

Set up a connection to a host computer.

Step 1: Double-click the Remote Desktop icon on the desktop.

Figure 1–29: Remote Desktop Icon

Step 2: To create a connection for Thin Client, please enter the **Computer** name and click Options**.**

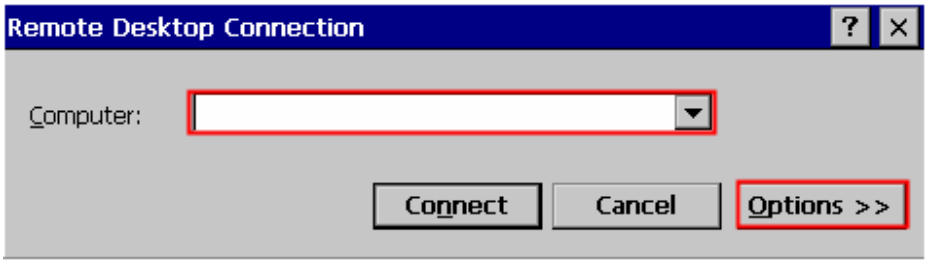


Figure 1–30: Remote Desktop Simple Interface

Step 3: Enter the user name and password to connect to the computer.

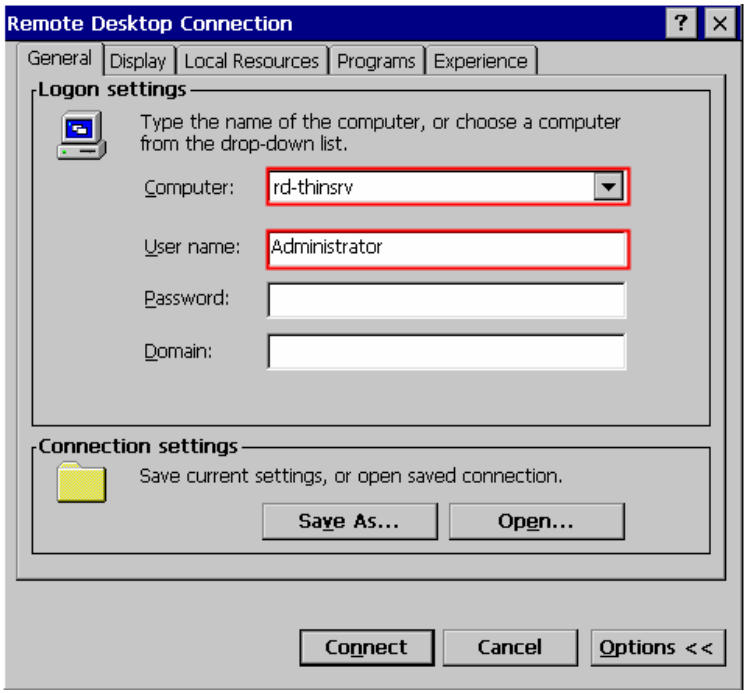


Figure 1–31: Remote Desktop Extended Interface

Step 4: Select **Start Programs** as the default application to start when you connect or specify an application name. If you select to specify an application, you can also specify a working directory.

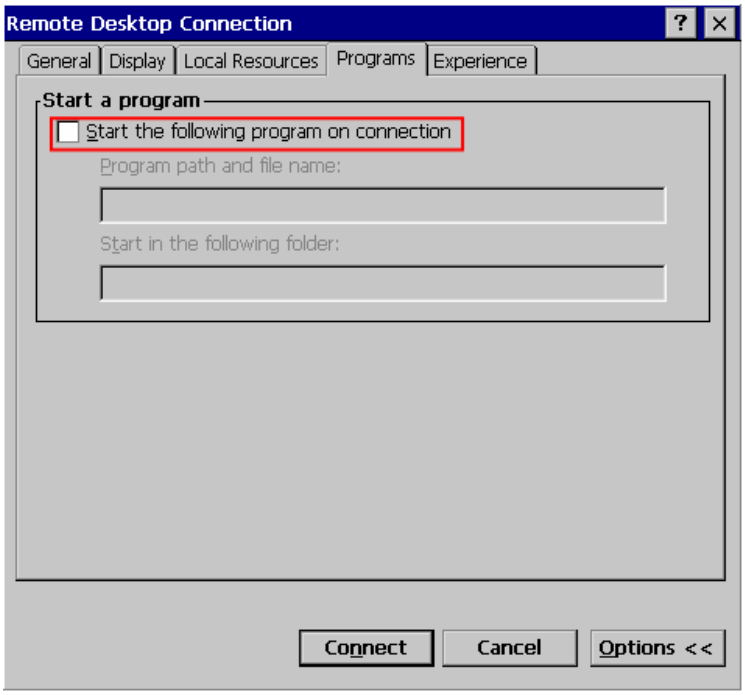


Figure 1–32: Remote Desktop Programs Tab

Step 5: Click **Save As** to save the new connection.

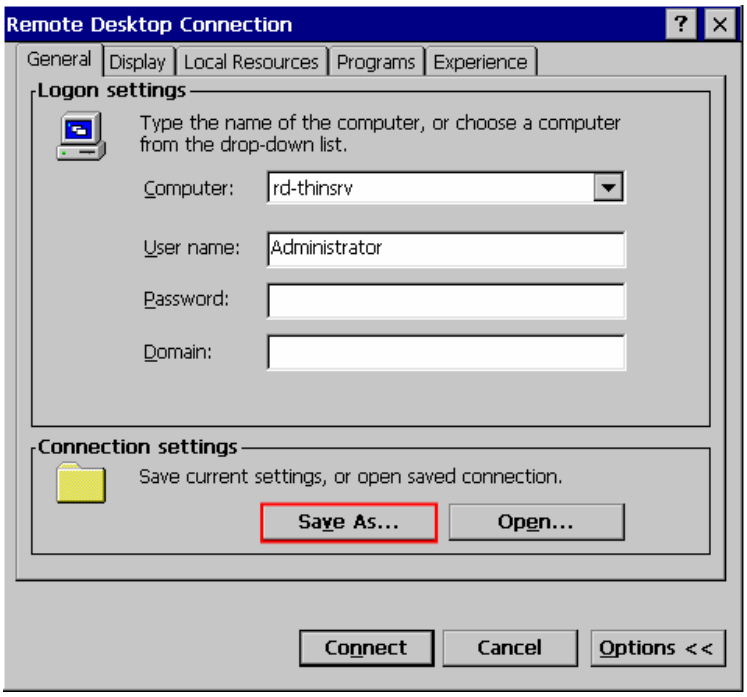


Figure 1–33: Remote Desktop General Tab

Step 6: Select the connection you created in Step 2. Then click **Connect**.

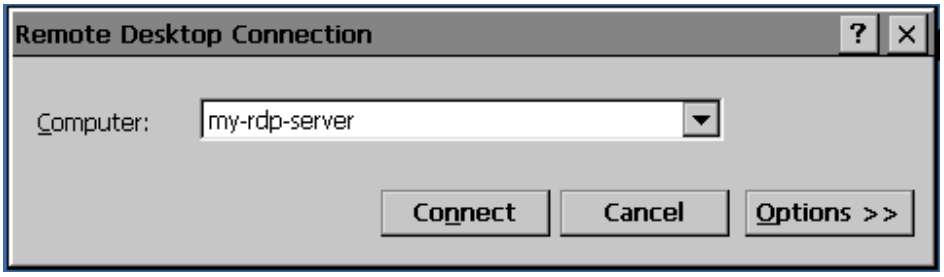


Figure 1–34: Remote Desktop Connection

Step 7: Enter the [User name], [Password] and [Domain] of the computer to connect to, and click **Connect**.

Figure 1–35: Windows Server 2003 Logon

1.4.3 Software-based Input Panel

A large-sized onscreen keyboard can be used for entering information.

Step 1: Click the SIP icon.

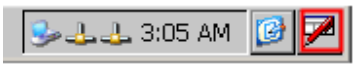


Figure 1–36: Software Keyboard Icon

Step 2: Select **LargeKB**.

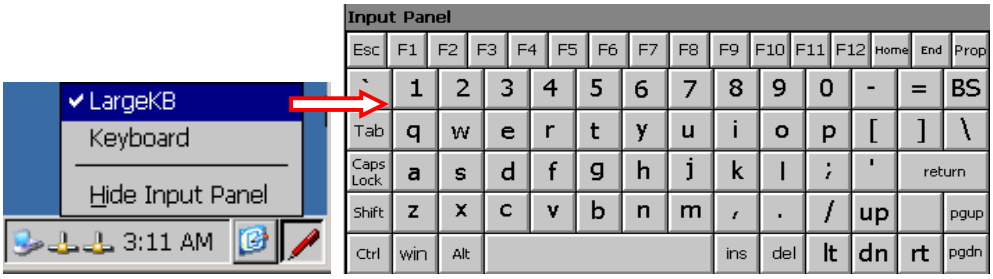


Figure 1–37: Large Software Keyboard

Step 3: Or select **Keyboard**.

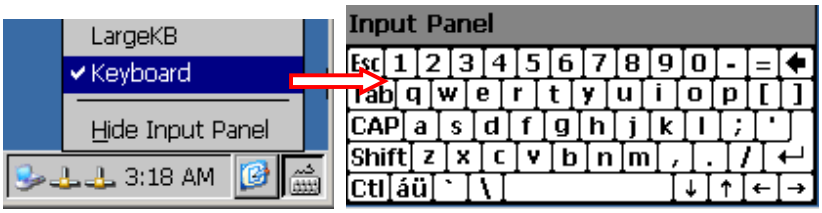


Figure 1–38: Normal Software Keyboard

1.4.4 Media Player

Step 1: Double-click the Media Player icon.

Figure 1–39: Media Player Desktop Icon

File: Use [Open], [Close], [Play lists], [Favorites] functions to control and manage the Media File.

View: To control the appearance of the Media Player panel.

Playback: To control the playing status of Media Player.

Figure 1–40: Windows Media Player

1.4.5 File Viewer

File View enables you to view files created for various Microsoft® programs. You cannot edit these files.

A File Viewer includes the following applications.

Microsoft® Excel Viewer: View, print and copy Excel documents.

Figure 1–41: Microsoft® Excel Desktop Icon

Microsoft® Word Viewer: View, print and copy Word documents.

Figure 1–42: Microsoft® WordPad Desktop Icon

Microsoft® PowerPoint Viewer: View, print and copy PowerPoint documents.

Figure 1–43: Microsoft® PowerPoint Viewer Desktop Icon

Microsoft® Image Viewer: View, print and copy Image File.

Figure 1–44: Microsoft®® Image Viewer Desktop Icon

Microsoft® PDF Viewer: View, print and copy PDF documents.

Figure 1–45: Microsoft® PDF Viewer Desktop Icon

1.4.6 Setup System Time

Step 1: Double Click the Time to set the system time of your device.

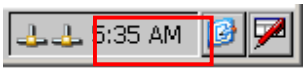


Figure 1–46: System Time

Step 2: Setting the Date/Time, Current Time, Time Zone.

Step 3: Click **Apply** to complete setting.

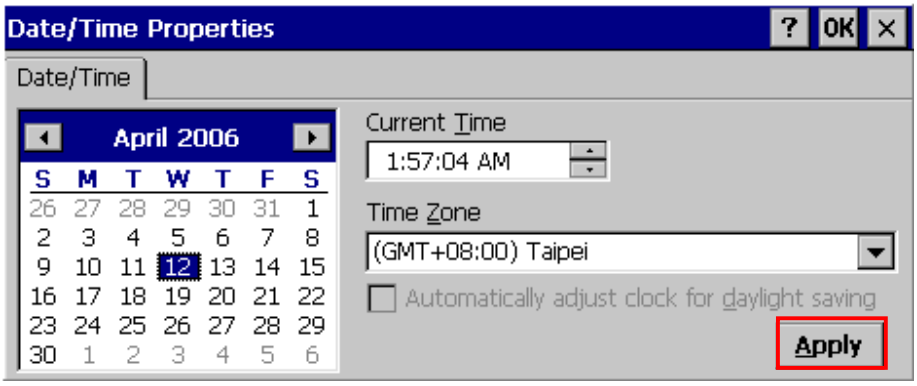


Figure 1–47: Date/Time Properties

1.5 IEI CEUTILITY 1.0

1.5.1 Launching IEI CEUTILITY 1.0

To launch the utility, select Start → Programs →IEI→IEI CEUTILITY 1.0. (the target execution file is IEI_CEUTILITY.exe in “SYSTEM” directory in your default SD Memory Card file system).

1.5.2 General Settings

On this page, you can configure and save the Registry. The steps are illustrated as below:

Figure 1–48: IEI CE Utility

1.5.2.1 Registry Settings

You can view your device registry keys and values by clicking the "**View Registry"** button. If you want to restore system registry to default factory settings, click "**Recover to Factory Settings",** before you do this, make sure all custom applications are no longer associated with any user-defined registry keys, since these keys cannot be recovered again and would be erased.

1.5.2.2 Save Registry Settings

Same function as Save Registry in the Start Menu.

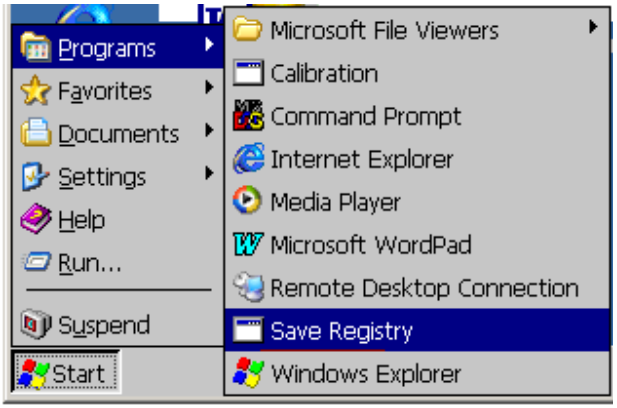


Figure 1–49: Save Registry

Saves all changes to non-volatile memory so they are not lost when the system is restarted.

1.5.3 Auto Execution

Programs can be set to load when the device is turned on. The programs are loaded from the top of the list to the bottom.

To add a new program to the list, double-click the last (empty) row or click the "Add" button. Alternatively, click the "…" or double-click to select from the file dialog box.

Select and item and click "Edit" to change the path of an entry.

Highlight an item then click "Delete" to remove it from the list.

Adding an executable into the path list.

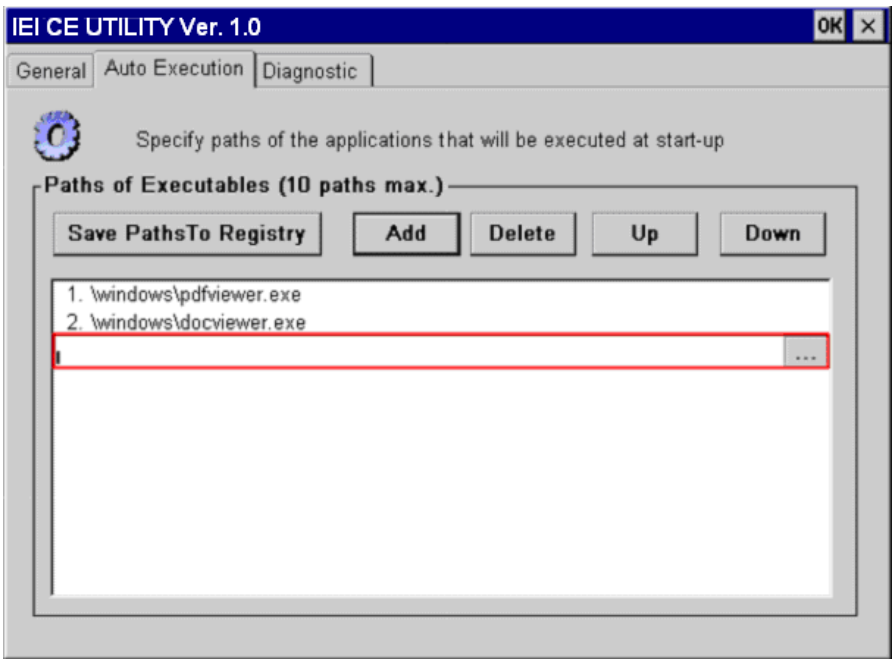


Figure 1–50: Auto Execution

To chose an application path from the file dialog box

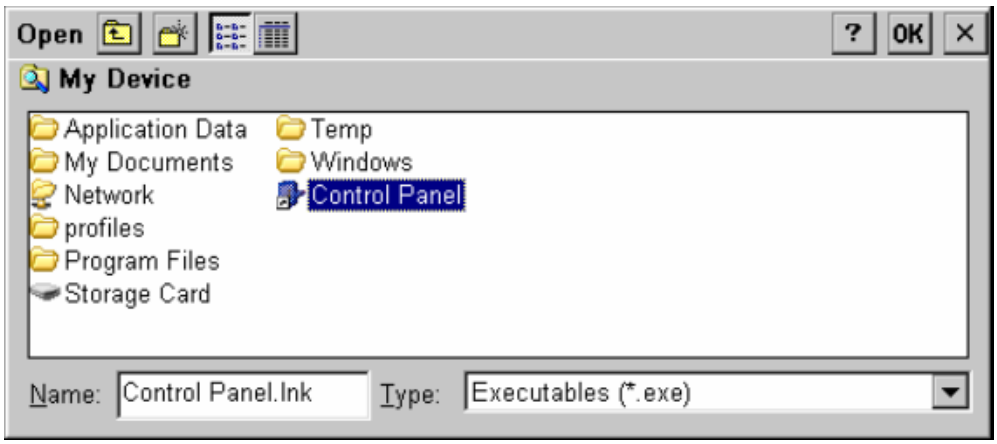


Figure 1–51: Auto Execution Choose Program Dialog

1.6 Contents of Default Secure Digital Card memory card

1.6.1 OS Image, Logo File and Configuration File

The Windows CE 5.0 OS Image file (NK.bin), the picture for boot up screen (LOGO.bmp) and the configure file (WINCE.TXT) should be located in root of file system of SD Memory Card. For details about the **configuration file**, please refer to **section 2.7**.

My Device→ Storage Card.

Figure 1–52: OS Image, Startup Logo and Configuration File

Also in the storage card is "**agentd.log".** This is a log file automatically generated by **IEI_RMTCE, the Windows CE agent of Remote Management tools**.

Figure 1–53: IEI_RMTCE Log File

1.6.2 List of applications in system folder

A directory named "**SYSTEM**" in the default SD Card file system contains system files, utilities, and sample applications. Please select My Device→ Storage Card →System

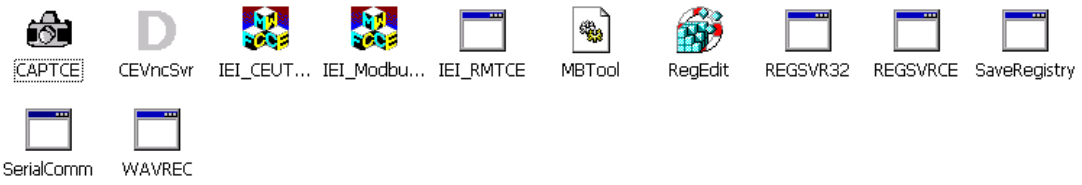


Figure 1–54: System Directory

1.6.2.1 Screen Capture

The screen capture software will take a picture of what is on the screen. Double-click "CAPTCE.exe" to start the application. It appears in the bottom right-hand corner.

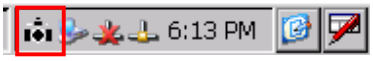


Figure 1–55: Screen Capture Icon

Tap this icon to capture the screen to a bitmap file named "CAPT000n.bmp" in the directory "**My Device"**.

Figure 1–56: Screen Capture

1.6.2.2 IEI_RMTCE & CEVncSvr

IEI_RMTCE.exe is the Windows CE agent of IEI Remote management tools. It is executed automatically in Windows CE device side while your Windows CE device started, and it would wait for communication with PC side remote manager of **IEI Remote Management tools**. Please refer to **Chapter 4.1.4.** for details of **IEI Remote Management tools.**

1.6.2.3 IEI_CEUTILITY

IEI Windows CE device utility for configuring, managing, updating, and diagnostics of your IEI ALCHEMY AU1250 RISC-based Windows CE 5.0 devices. Please refer to chapter **2.5.** for details.

1.6.2.4 RegEdit

This program would help customers to view and edit the settings in your Windows CE devices.

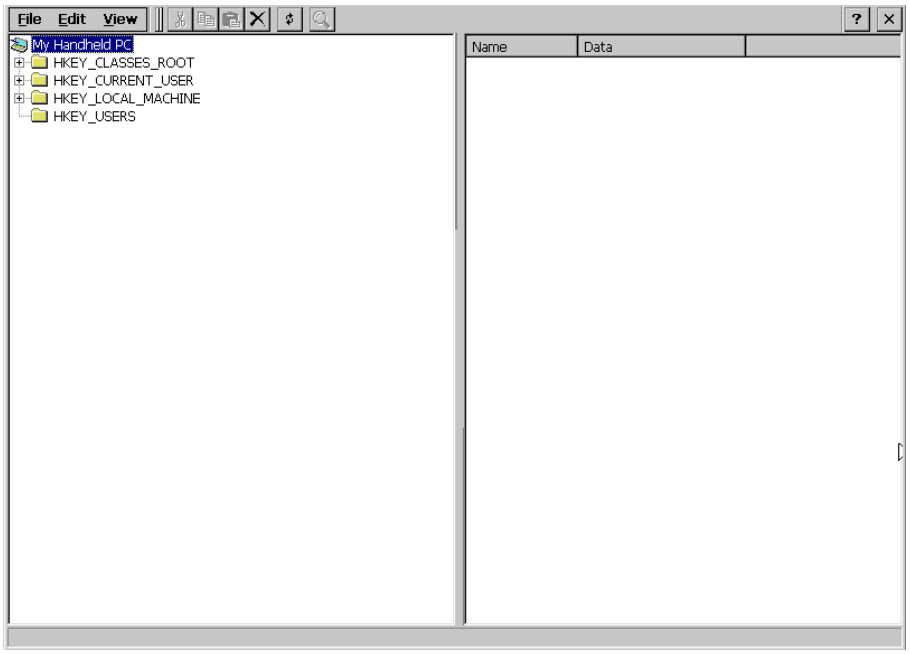


Figure 1–57: Registry Editor

1.6.2.5 REGSVR32 & REGSVRCE

Execute these at the DOS command prompt.

REGSVR32:

Function: Register or Unregister a DLL.

Syntax: REGSVR32 [/U] [/S] [/C] [/I: [*Command_Line*]] DLL_Name
REGSVR32 [/U] [/S] [/C] /N /I: [*Command_Line*] DLL_Name

Switches: /u -Unregister Server.
/s -Silent ;no dialogue boxes.
/c -Console output.
/n -Don't call DllRegisterServer
/i -Call DllInstall (or DllUninstall if /u is specified)
Command Line An optional command line for DllInstall.

REGSVRCE:

Function: Register or Unregister a DLL.

Syntax: REGSVRCE [/U] [/S]: [*Command_Line*]] DLL_Name

Switches: /u -Unregister Server.

/s -Silent; display no message boxes.

1.6.2.6 Save Registry

Saves any settings made to the registry. If not saved, settings will return to their original values when the system is reset.

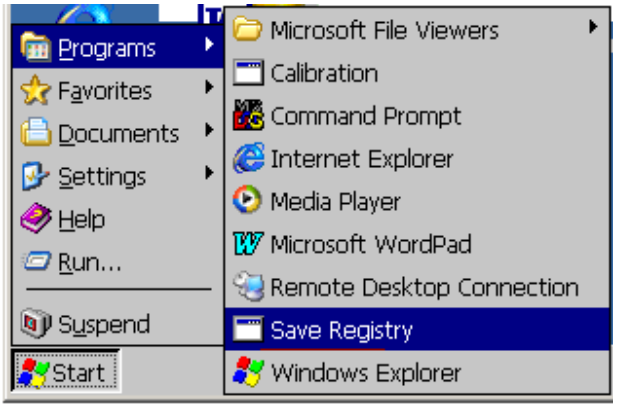


Figure 1–58: Save Registry

1.7 Configuration File

1.7.1 Overview

The configure file (WINCE.txt) is located in the root directory of SD Memory Card. It loads and erases the EEPROM, adjusts the screen resolution and the COM2 mode.

```
================================================================================
        offset          value
================================================================================
*       0x00            0x00        // load registry from EEPROM
*       0x01            0x00        // erase registry in EEPROM
*       0x02            0x01        // display type:  0x01 = LTM04C380K (640 x 480)
                                    //                0x0a = G104SN03    (800 x 600)
                                    //                0x0d = FG070050DNCWAG01 (800 x 480)
*       0x03            0x00        //com2 mode:     0x00 = RS-232
EOF
```

The asterisk (*) indicates a line with a setting. The offset value should not be changed, but the value can be changed according to required settings. Anything after a double slash (//) is a comment.

1.7.2 Offset 0x00: Load Registry From EEPROM

0x00: loads default registry and skips loading from EEPROM.

0x01: loads registry from EEPROM.

1.7.3 Offset 0x01: Erase Registry in EEPROM

0x00: current registry is not erased.

0x01: registry erased during boot.

If the system hangs after boot, try setting this to 0x01, then restarting the system to erase the registry.

1.7.4 Offset 0x02: Display Type

Don't change this value, if the setting does not match the screen resolution, the image won't display properly.

Chapter

2

Using the Remote Management Tool

2.1 About IEI Remote Management Tools

2.1.1 Overview

IEI Remote Management Tools allow simple, centralized control of multiple Windows CE devices. These tools are developed specifically for IEI XScale PXA270 Windows CE 5.0 devices, IPXA270-DK01 development kits and IEI RMI Alchemy AU1250 Windows CE 5.0 devices.

2.1.2 Important Features of the IEI Remote Management Tools

- Managing IEI Windows CE devices remotely
- Automatic search and verification of available IEI Windows CE devices in the network
- Remote wakeup, restart & shutdown
- Remote modification of thin client settings
- Remote adding and deleting of RDP settings
- Monitor settings of thin clients including device name, IP address, MAC address, firmware version and agent program
- Supports firmware update for single or multiple devices via FTP
- Provides current status and event record
- Current status monitoring

2.1.3 System Requirement

The IEI Remote Management Tools can be installed in the following OS:

- Windows® XP Pro
- Windows® 2000/ Pro/ Server
- Windows® 2003/ Server

2.1.4 Concept

The IEI RMT(Remote Management Tools) includes two main categories:

Step 1: **IEI Remote Manager:** is installed on the PC with Microsoft® Windows or Windows Server.

Step 2: **IEI CE Agent:** is installed in the SD Memory Card file system. This starts automatically when the system is started.

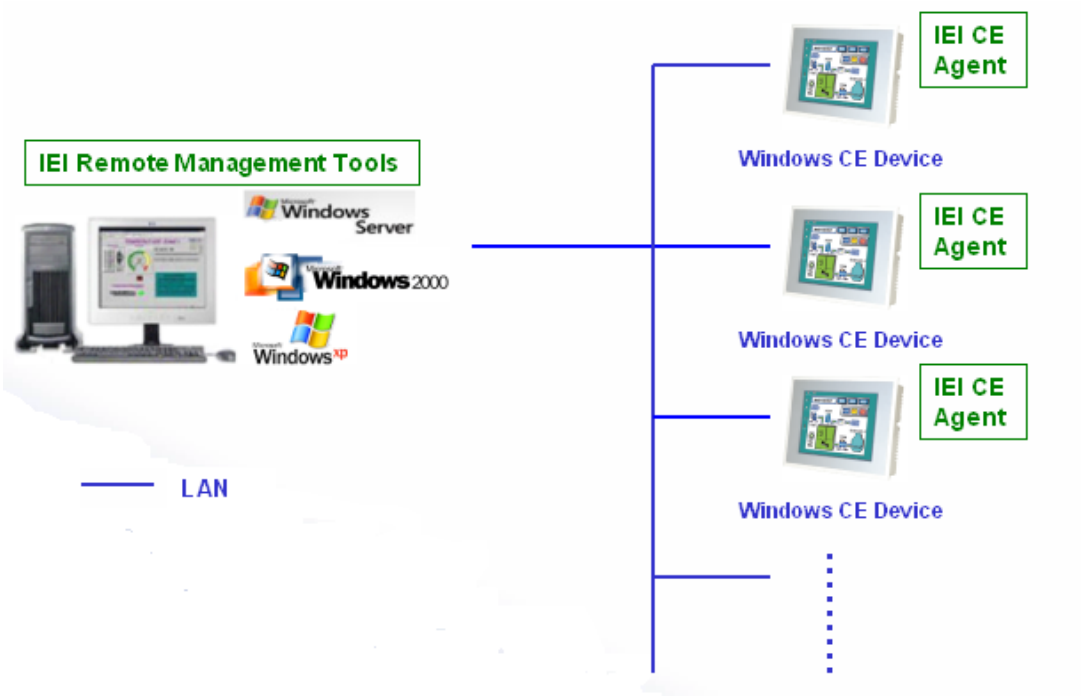


Figure 2–1: Remote Management Tools Overview

The following sections describe how to setup the remote management tool.

2.2 To Install IEI Remote Management Tools

To install the remote management tool.

Step 1: Run IEI Remote Management Tools setup from the CD-ROM (\IEI Remote Management Tools\ **IEI_RMT.exe**). Select the components to install and click **Next**.

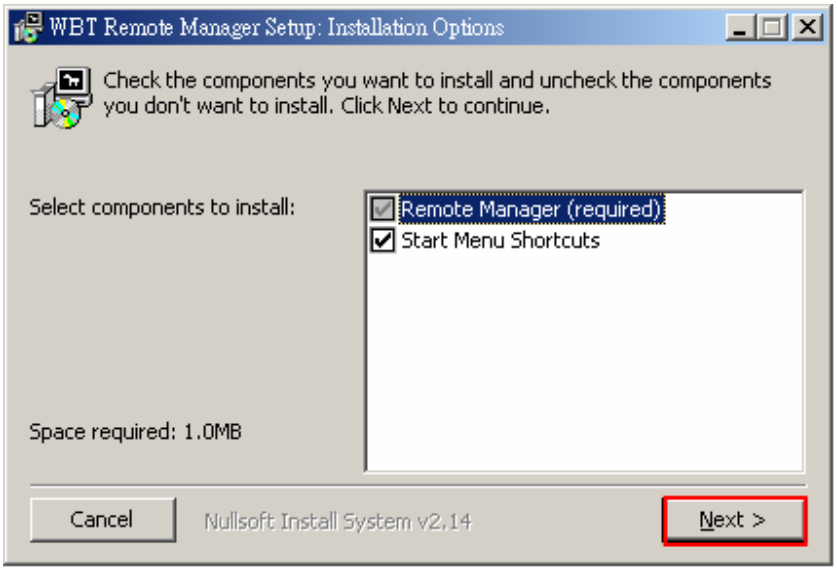

WBT Remote Manager Setup: Installation Options
Check the components you want to install and uncheck the components you don't want to install. Click Next to continue.
Select components to install:
Remote Manager (required)
Start Menu Shortcuts
Space required: 1.0MB
Cancel
Nullsoft Install System v2,14
Next >

Figure 2–2: Remote Management Setup Installation Options

Step 2: Specify the destination folder that the program is installed to and click **Install**. (If unsure, leave the default)

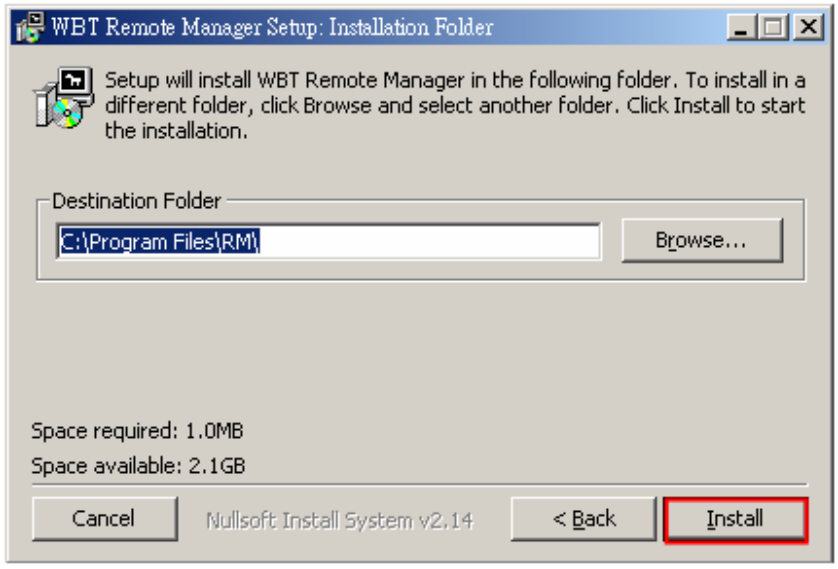

WBT Remote Manager Setup: Installation Folder
Setup will install WBT Remote Manager in the following folder. To install in a different folder, click Browse and select another folder. Click Install to start the installation.
Destination Folder
C:\Program Files\RM\
Browse...
Space required: 1.0MB
Space available: 2.1GB
Cancel
Nullsoft Install System v2,14
< Back
Install

Figure 2–3: Remote Management Setup Installation Folder

Step 3: When installation completes, click **Close**.

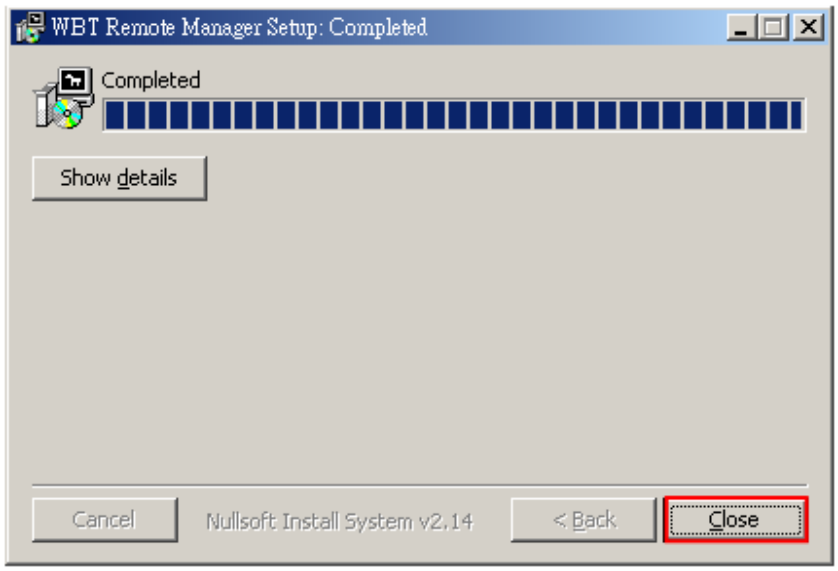


Figure 2–4: Remote Management Setup Completed

2.3 Remote Management Tools

IEI Windows CE devices online/ offline status

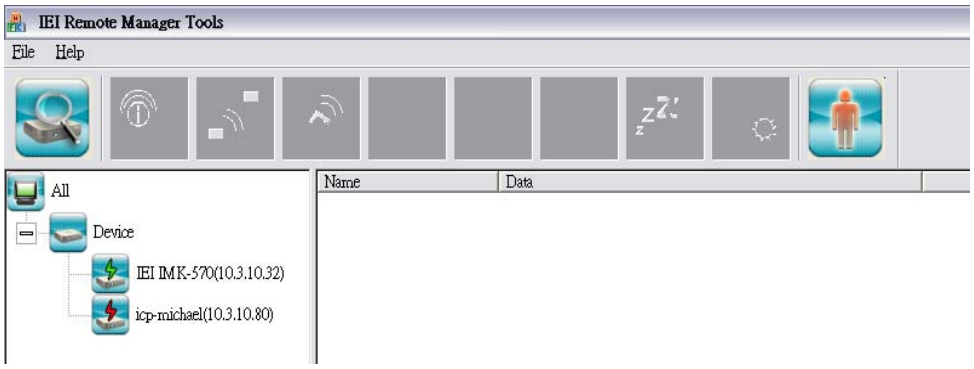


Figure 2–5: Remote Management

device is offline now

device is online now

Step 1: After installing IEI Remote Management Tools run the program. The following window will be shown: Default Password: Admin

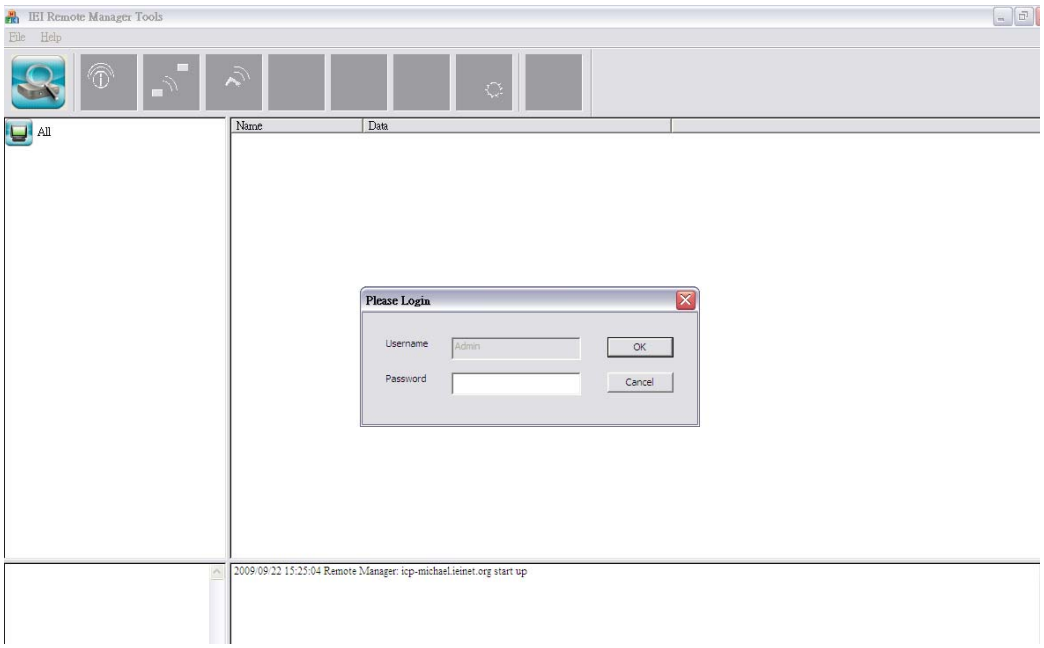


Figure 2–6: Remote Management

Step 2: Select **Set Subnet** from **File** on the toolbar.

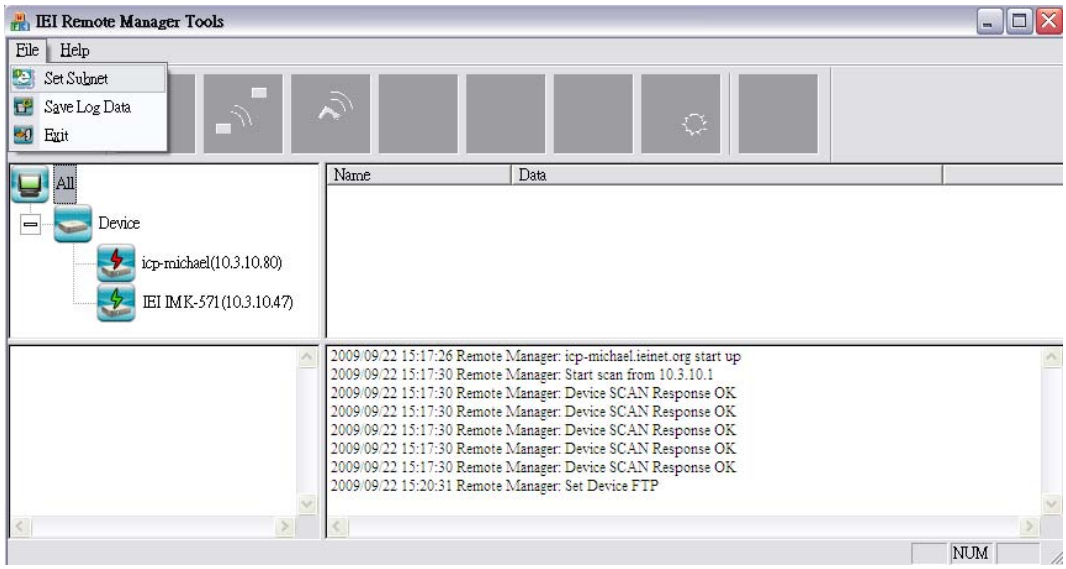

IEI Remote Manager Tools
File Help
Set Subnet
Save Log Data
Exit
All
Device
icp-michael(10.3.10.80)
IEI IMK-571(10.3.10.47)
Name
Data
2009/09/22 15:17:26 Remote Manager: icp-michael.ieinet.org start up
2009/09/22 15:17:30 Remote Manager: Start scan from 10.3.10.1
2009/09/22 15:17:30 Remote Manager: Device SCAN Response OK
2009/09/22 15:17:30 Remote Manager: Device SCAN Response OK
2009/09/22 15:17:30 Remote Manager: Device SCAN Response OK
2009/09/22 15:17:30 Remote Manager: Device SCAN Response OK
2009/09/22 15:17:30 Remote Manager: Device SCAN Response OK
2009/09/22 15:20:31 Remote Manager: Set Device FTP
NUM

Figure 2–7: Remote Management Set Subnet

Step 3: Enter the subnet for monitoring IEI Windows CE devices.

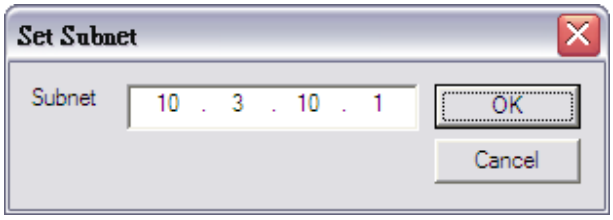


Figure 2–8: Remote Management Set Subnet

Step 4: Click to search for all available IEI Windows CE devices in the subnet.

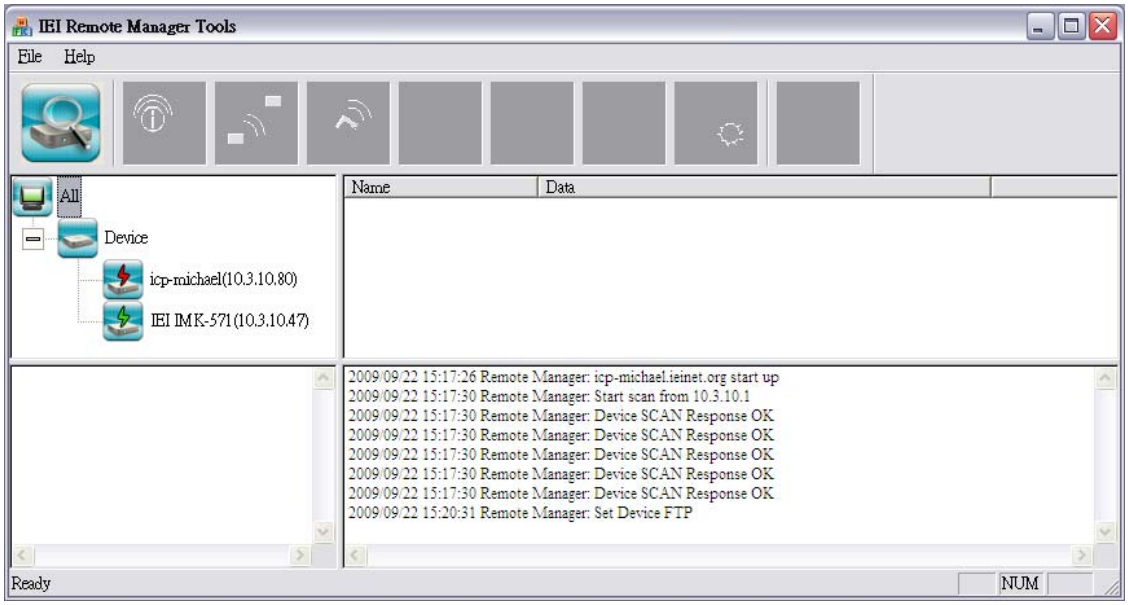

IEI Remote Manager Tools
File Help
All
Device
icp-michael(10.3.10.80)
IEI IMK-571(10.3.10.47)
Name
Data
2009/09/22 15:17:26 Remote Manager: icp-michael.ieinet.org start up
2009/09/22 15:17:30 Remote Manager: Start scan from 10.3.10.1
2009/09/22 15:17:30 Remote Manager: Device SCAN Response OK
2009/09/22 15:17:30 Remote Manager: Device SCAN Response OK
2009/09/22 15:17:30 Remote Manager: Device SCAN Response OK
2009/09/22 15:17:30 Remote Manager: Device SCAN Response OK
2009/09/22 15:17:30 Remote Manager: Device SCAN Response OK
2009/09/22 15:20:31 Remote Manager: Set Device FTP
Ready
NUM

Figure 2–9: Remote Management Device Search

2.4 Wake up/ Configure/ Update/ Connect an IEI Windows CE device

The IEI Remote Management Tools can be used to wake up, configure, update and connect to IEI Windows CE devices remotely.

2.4.1 Connect Remote Device

Step 5: To connect to an IEI Windows CE device, run the IEI Remote Management Tools. Click to search for all available IEI Windows CE devices.

Figure 2–10: Search for Devices

Step 6: The devices will be shown on the left column.

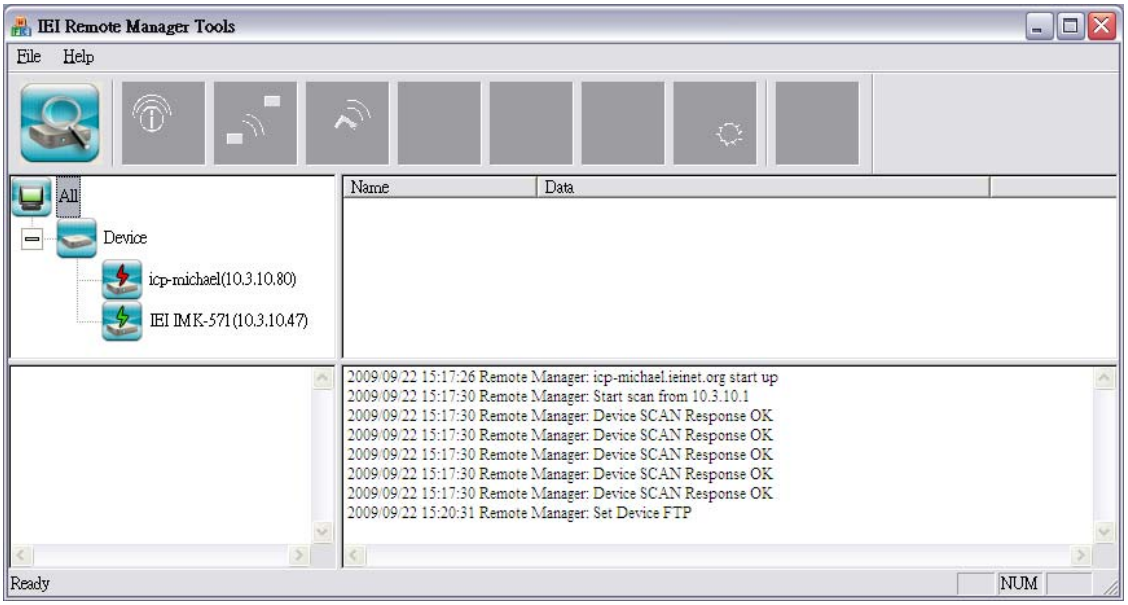

IEI Remote Manager Tools
File
Help
All
Device
icp-michael(10.3.10.80)
IEI IMK-571(10.3.10.47)
Name
Data
2009/09/22 15:17:26 Remote Manager: icp-michael.ieinet.org start up
2009/09/22 15:17:30 Remote Manager: Start scan from 10.3.10.1
2009/09/22 15:17:30 Remote Manager: Device SCAN Response OK
2009/09/22 15:17:30 Remote Manager: Device SCAN Response OK
2009/09/22 15:17:30 Remote Manager: Device SCAN Response OK
2009/09/22 15:17:30 Remote Manager: Device SCAN Response OK
2009/09/22 15:17:30 Remote Manager: Device SCAN Response OK
2009/09/22 15:20:31 Remote Manager: Set Device FTP
Ready
NUM

Figure 2–10: Device List

2.4.2 Configure an IEI Windows CE device

To configure an IEI Windows CE device, select the device on the left column and then click (Terminal Property) on the toolbar.(After you pass the security check.)

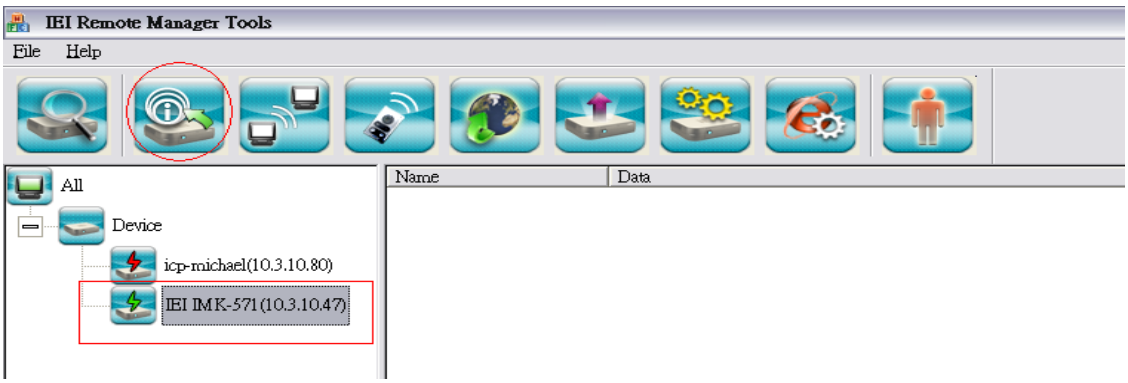


Figure 2–112: Terminal Properties

2.4.2.1 General

You can view the general information of the device in this page.

Figure 2–123: Terminal Properties General Tab

2.4.2.2 Control Panel

Control Panel enables you to modify functions available for a device .

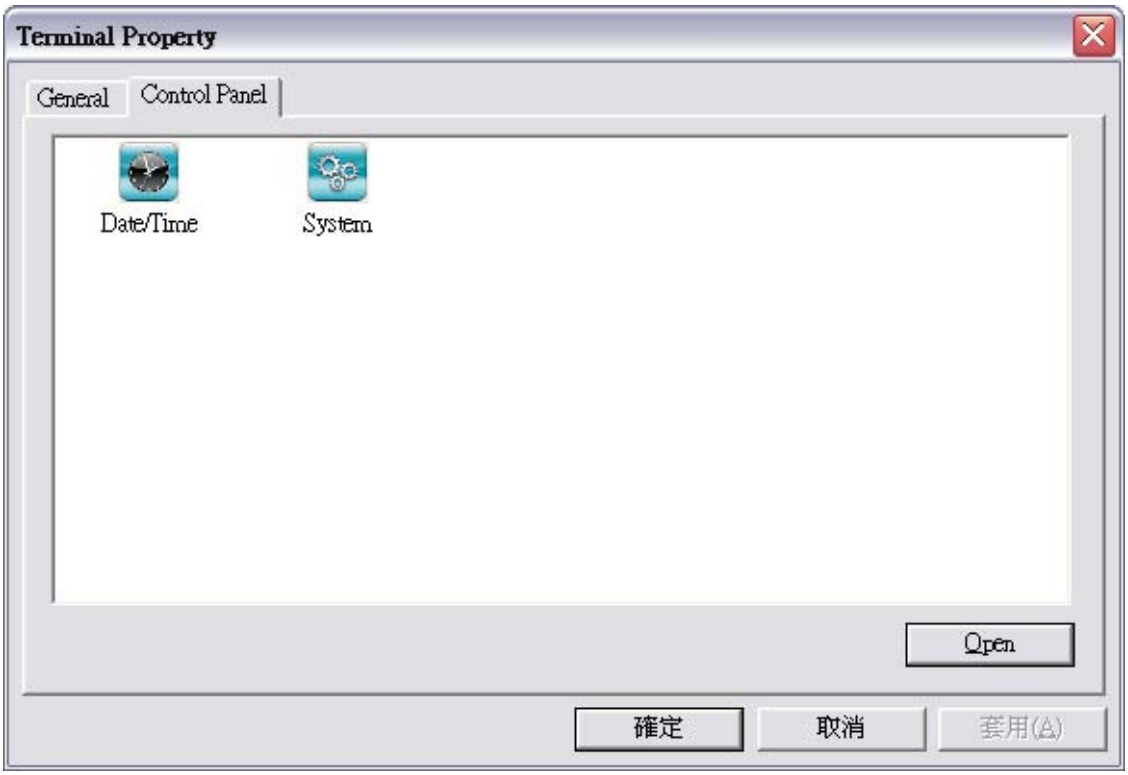


Figure 2–15: Terminal Properties Control Panel Tab

2.4.2.2.1 Date & Time

Set the time of the device.

Figure 2–16: Set Device Time

2.4.2.2.2 System Property

General

This section displays device information.

Figure 2–17: System Property General Tab

2.4.2.2.3 Device Name

This section shows name of the device. You can enter a description here.

Figure 2–18: System Property Device Name Tab

2.4.2.2.4 Copyright

This section displays the copyright of the device.

System Property
General
Device Name
Copyright
Depending on the components you are running, your product may contain the following third party technologies:
Portions of this software are based on NCSA Mosaic. NCSA Mosaic was developed by the National Center for Supercomputing Applications at the University of Illinois at Urbana-Champaign.Distributed under a licensing agreement with Spyglass, Inc.
Contains security software licensed from RSA Data Security, Inc.
確定
取消
套用(A)

Figure 2–19: System Property Copyright Tab

2.4.2.3 Define Terminal Connection of an IEI Windows CE Device

Please follow the steps below to configure RDP connection of Thin Client via Remote Manager.

Step 1: Select the device name on the left column and click (RDP).

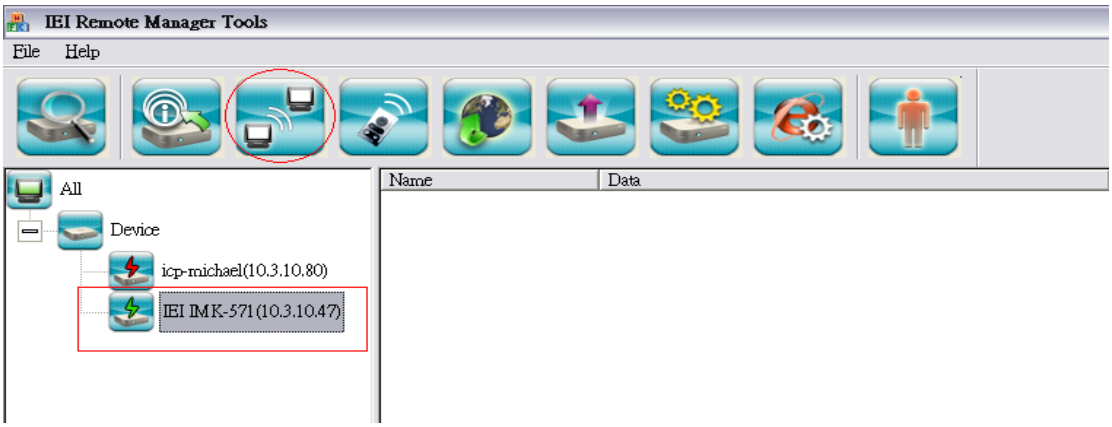


Figure 2–20: RDP Connection Properties

Step 2: The following screen appears.

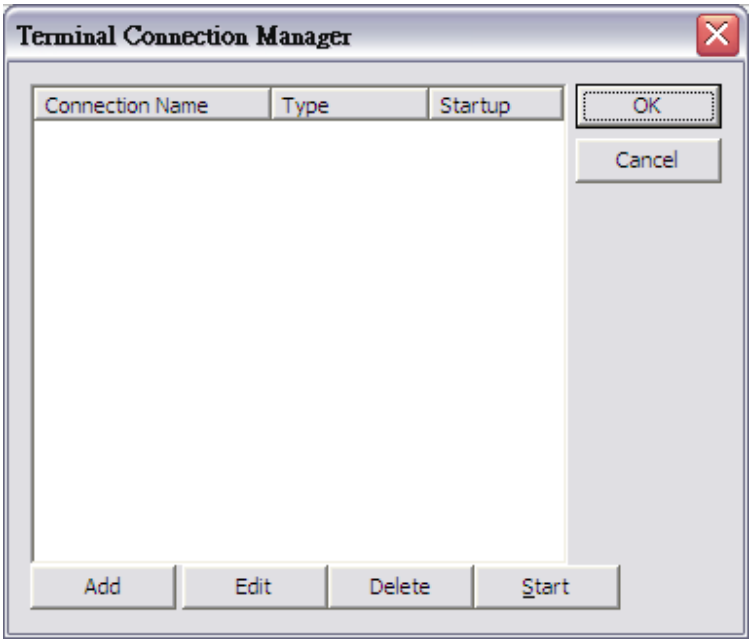


Figure 2–21: Terminal Connection Manager

Step 3: Click **Add** to add a new connection.

Step 4: To edit an existing connection, select the item and click **Edit**.

Step 5: To set the startup option for the connection, click **Start**. Select the startup option and click **OK**.

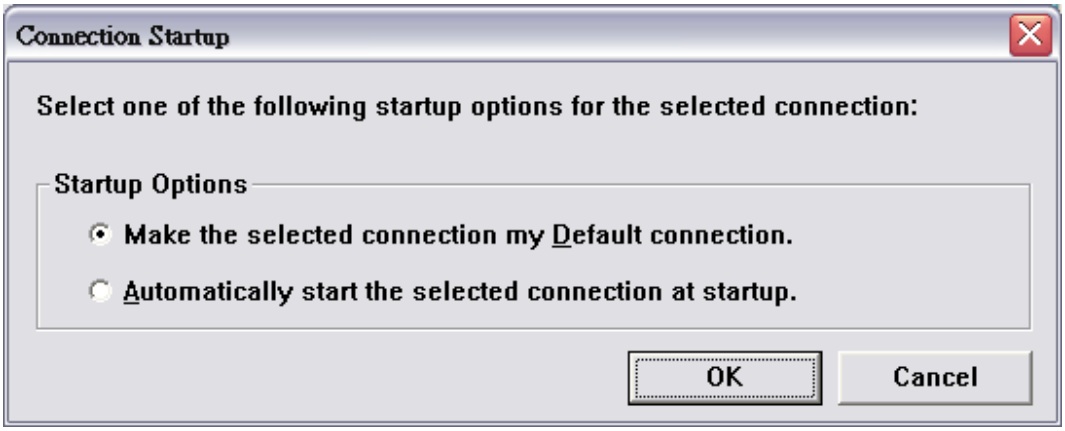

Connection Startup
Select one of the following startup options for the selected connection:
Startup Options
Make the selected connection my Default connection.
Automatically start the selected connection at startup.
OK
Cancel

Figure 2–22: Connection Startup

Step 6: To delete a connection, select the item and click **Delete**.

Step 7: After completing the settings, click **OK** to confirm or **Cancel** to quit.

2.4.2.4 Remote Desktop Display

You can use VNC to view a real time desktop display of any connected IEI Windows CE devices directly and control their mouse and keyboard just like being at the terminal.

Step 1: To use the VNC function, run Remote Manager. Select a connected IEI Windows CE device and click (VNC) on the toolbar.

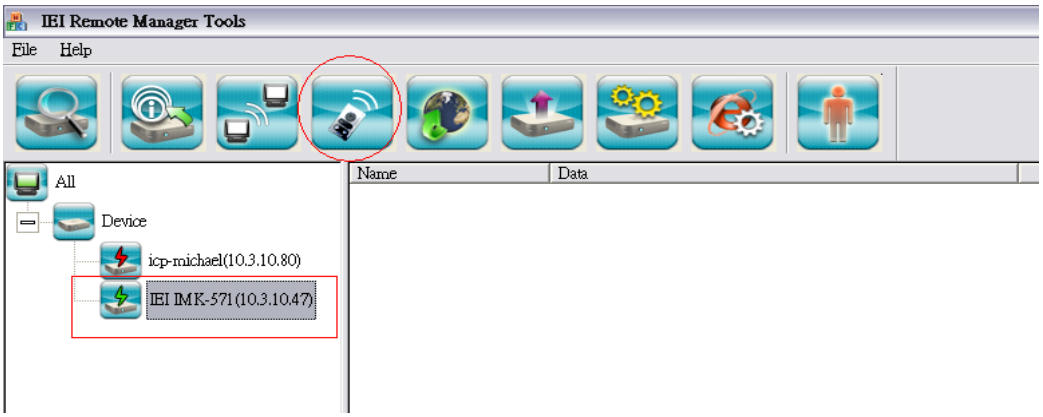


Figure 2–23: VNC Connection Properties

Step 2: The desktop of the connected device is shown in a new window.

Figure 2–24: Client PC VNC Viewer

2.4.2.5 Configure FTP Settings of an IEI Windows CE device

Step 1: This option is used to configure FTP settings of devices. Select a device on the left and click (FTP) on the toolbar.

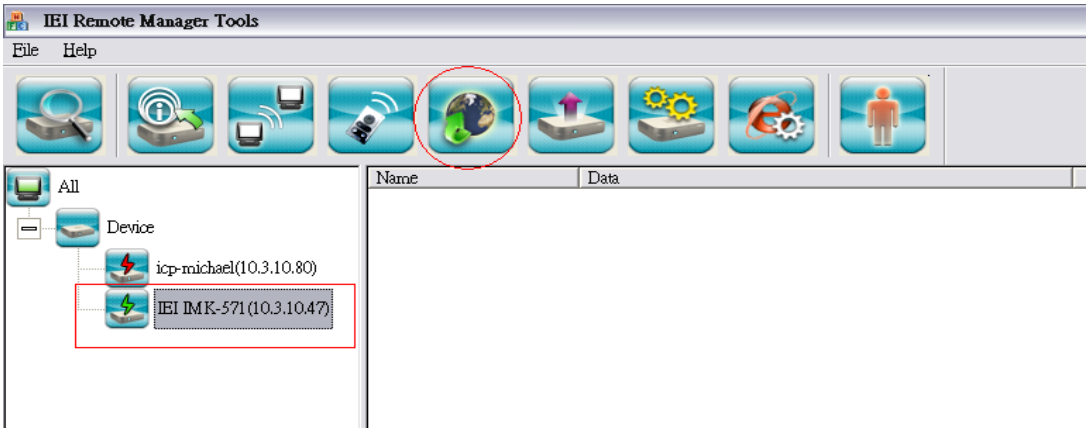


Figure 2–25: FTP Connection Settings

Step 2: The root directory of FTP service will be shown. Select the authentication method and click **OK**.

Step 3: The Windows CE device will automatically reset so changes take effect.

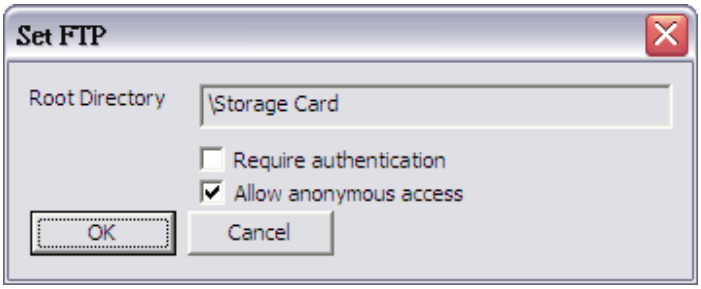


Figure 2–26: Set FTP Directory

2.4.2.6 Update an IEI Windows CE device

Step 1: To update an IEI Windows CE device, select a device on the left column and click (UPDATE).

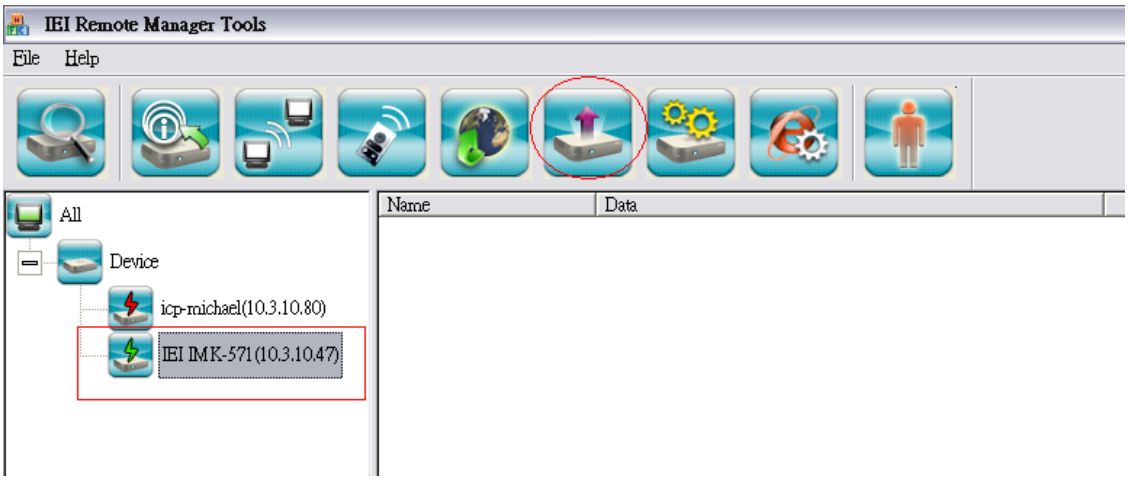


Figure 2–27: Device Update

Step 2: Select to update BIOS or OS of the device.

Step 3: Select the appropriate file for updating and click **Apply**.

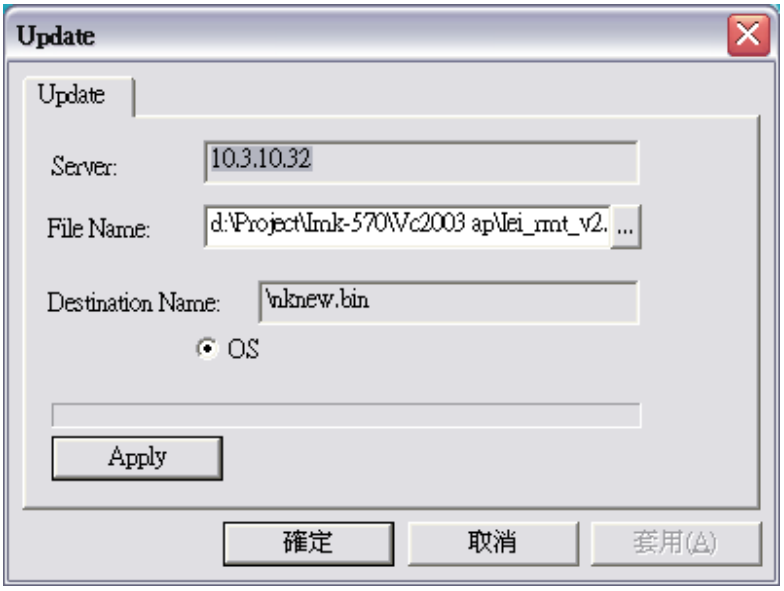


Figure 2–28: Device Update Dialog

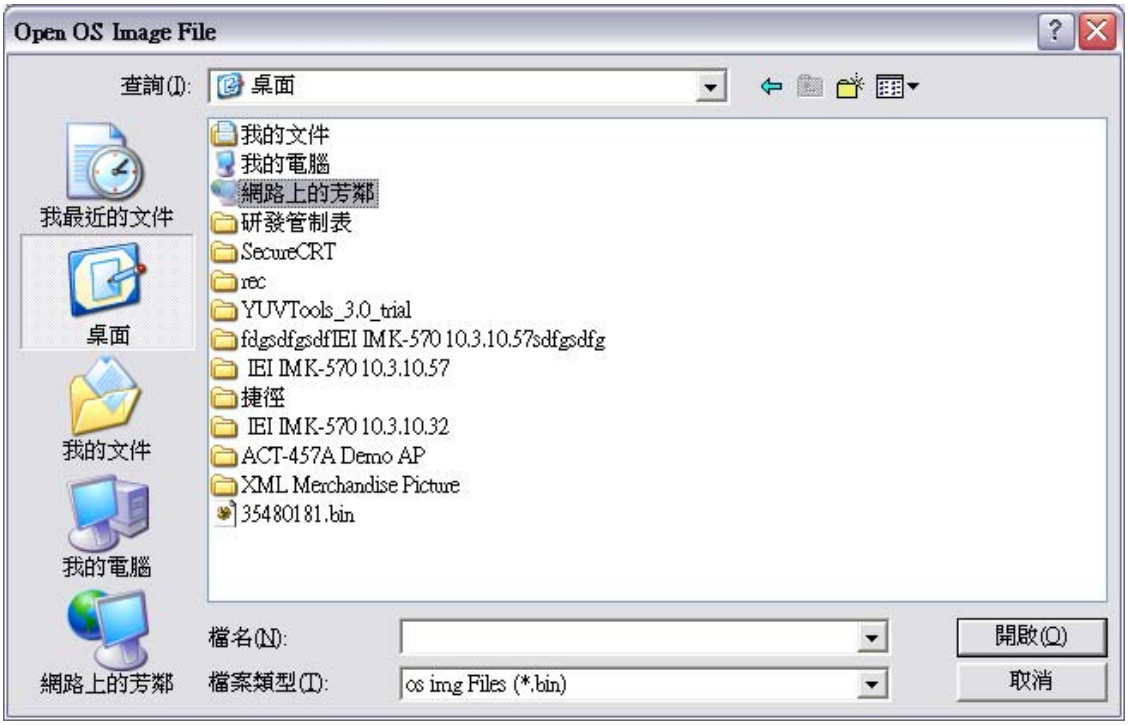


Figure 2–29: Browse for System Image

2.4.2.7 Record Logs for WBT

Step 1: This function enables network administrator to download log records of the thin client and check against the logs in case of any device error. To download the log file, select a connected client and click (LOG) on the toolbar.

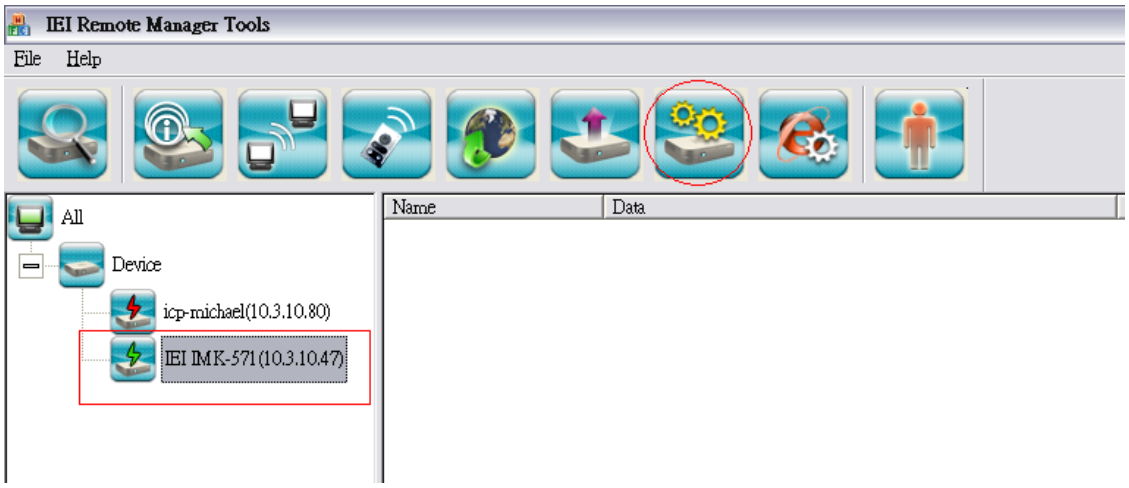


Figure 2–30: System Logs

Step 2: When the following screen appears, browse and select the location to save the file. Click **Apply** then **OK** to confirm.

Figure 2–31: Log Download Dialog

2.4.2.8 Network Parameter Configuration

Step 1: This function enables network administrator to set up the network parameter of indicate devices. To set up the parameter of indicate devices, select a connected client and click (NetConfig) on the toolbar.

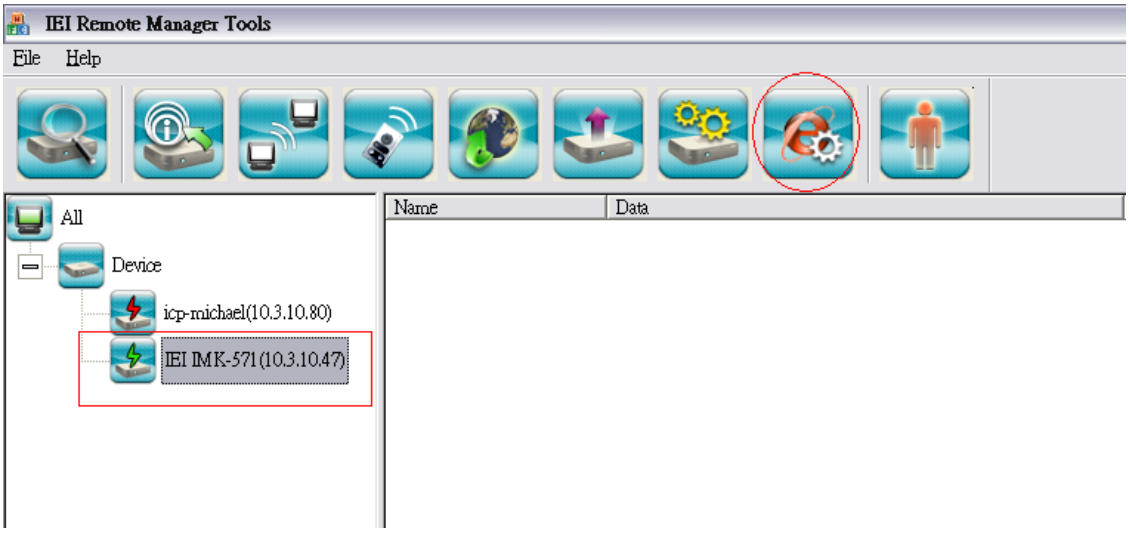


Figure 2–32: Network parameter configuration

Step 2: When the following screen appears, browse and set up the network parameter of indicate devices. Click **Set Network** to confirm.

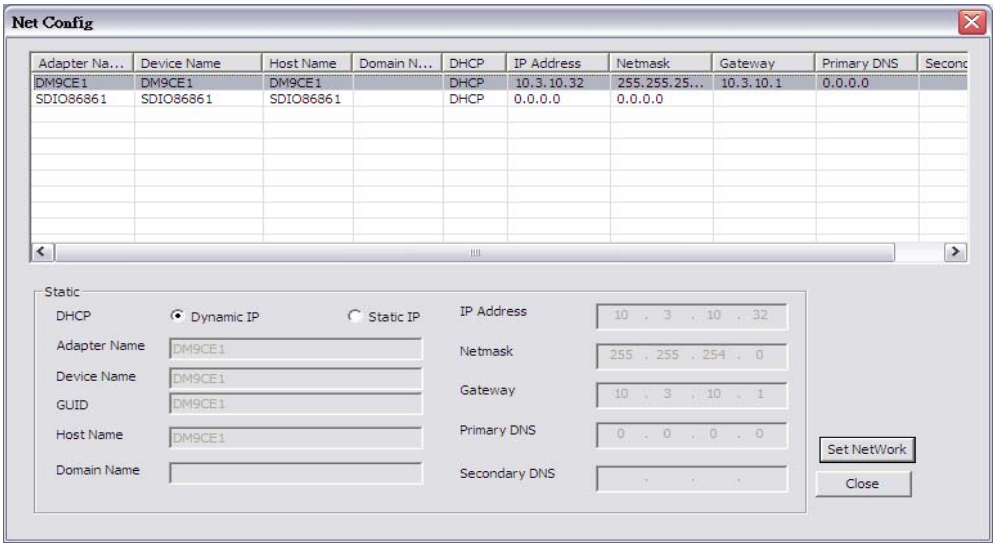


Figure 2–33:Net Config Dialog

2.4.2.9 Account management

Step 1: This function enables network administrator to add or modify account information of indicate devices. To add or modify account information of indicate devices, select a connected client and click (Account) on the toolbar.

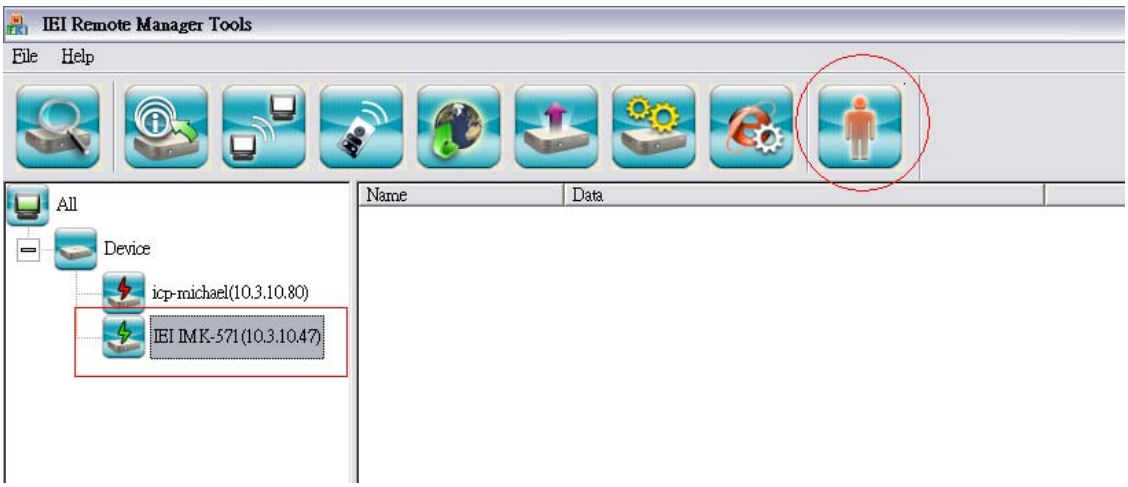


Figure 2–34: Account management

Step 2: When the following screen appears, modify Administrator's password. Click **Apply** to confirm.

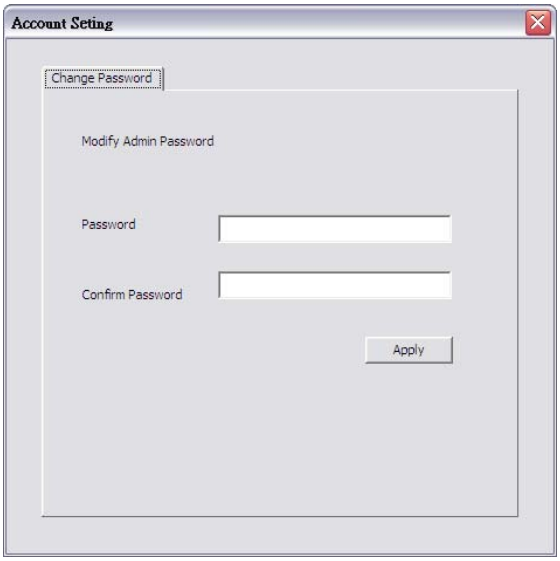


Figure 2–35:Account Setting Dialog -> change Admin password

Chapter

3

IMK Runtime Demo

3.1 Demo Path

Run the IMK demonstration from the path shown below:

/Storage Card/Demo/IMK Runtime Demo.exe

3.2 Main Page

- Button Video Go to Video Demo Frame.
- Button F1 Go to Barcode Demo Frame.
- Button F2 Go to Printer Demo Frame.
- Button F3 Go to MSR Demo Frame.
- Button F4 Go to Exit Frame.

Figure 3–1: Main Screen

3.3 Video Player

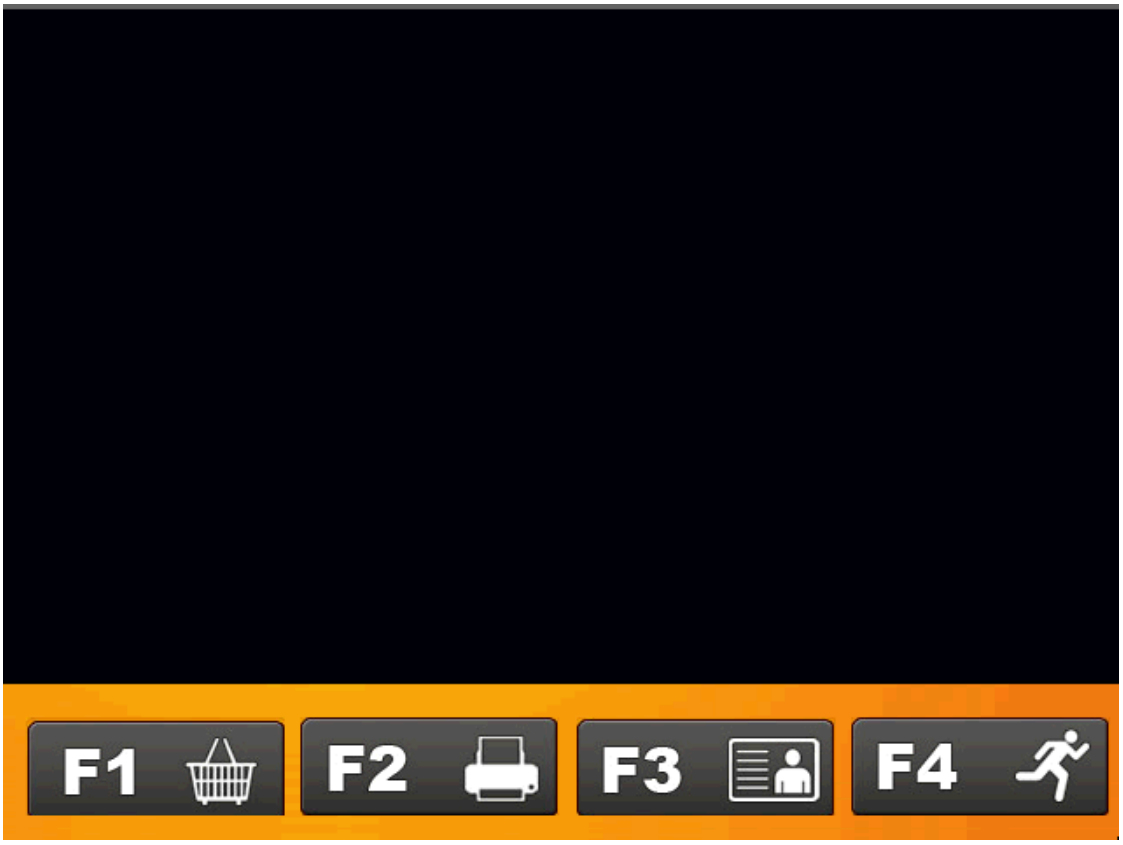


Figure 3–2: Play Video

3.4 Button F1: Barcode Demo.

"Select" Data Base – Search barcode in data base(XML) and display in this screen.

"Select" Test Mode – List barcode and compare with AIM ID data base.

Figure 3–3: Barcode Demo

Figure 3–4: Barcode Demo - Test Mode

3.5 Button F2: Printer Demo

Figure 3–5: Main Screen

Print Result

4710716000060
iEi
Barcode :
4710716000060
Product Name :
LEGO MINDSTORMS NXT
Product Price :
$10,000
Description :
Create the smartest, strongest and most advanced LEGO® robot ever, in as few as 30 minutes! The new NXT Intelligent Brick, your robot's "brain," features a powerful 32-bit microprocessor and more memory, plus support for USB 2.0, Bluetooth and more!

Figure 3–6: Main Screen

3.6 Button F3: MSR Demo.

Figure 3–7: MSR Demo Screen

3.7 Button F4: Exit

"Select" Exit button - Exit to WinCE.

"Select" Cancel button - Go back to IMK Runtime Demo Main Frame.

Figure 3–8: Exit

Notice : If you confront trouble when compiling IMK Runtime Demo source code, please refer to solution in Chapter 9 FAQ

Chapter

4

XML Merchandise Manager

4.1 Starting the XML Merchandise Manager

Double-click the XML Merchandise Manager.exe icon to start the program.

Figure 4–1: XML Merchandise Manager Icon

4.2 Modifying the XML File

Step 3: Click "Edit XML" to select the location of the XML file containing the product information.

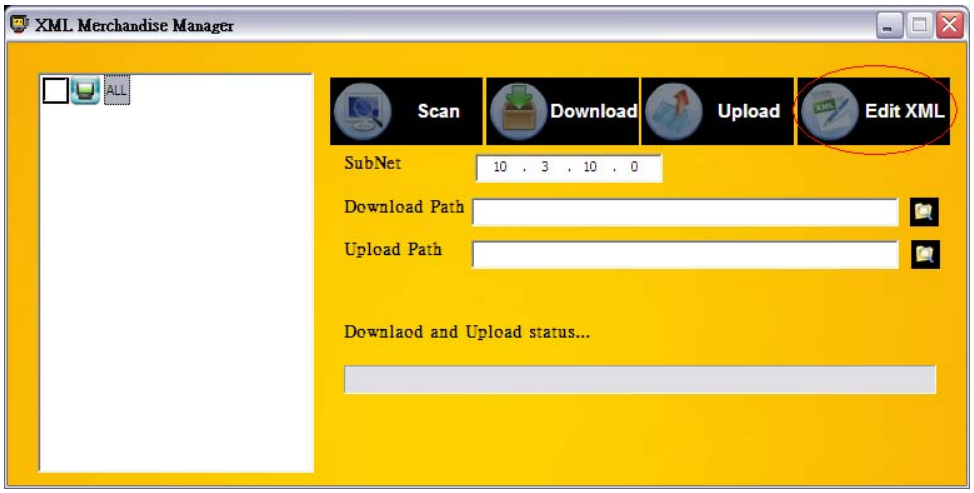


Figure 4–2: Main Window

Step 4: Click the "New" button to pick the location where the XML file will be created.

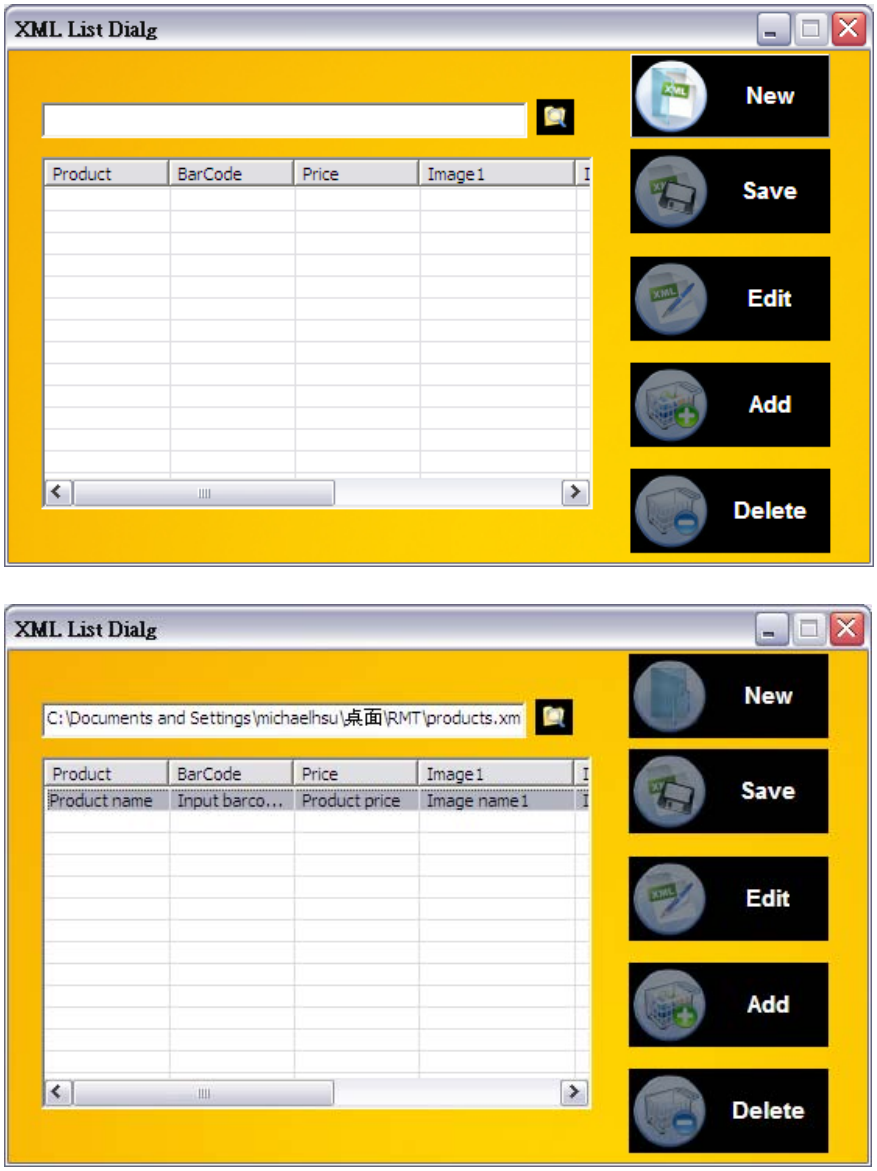


Figure 4–3: Create a New XML File

Step 5: Click the "Folder" button to pick the XML file.

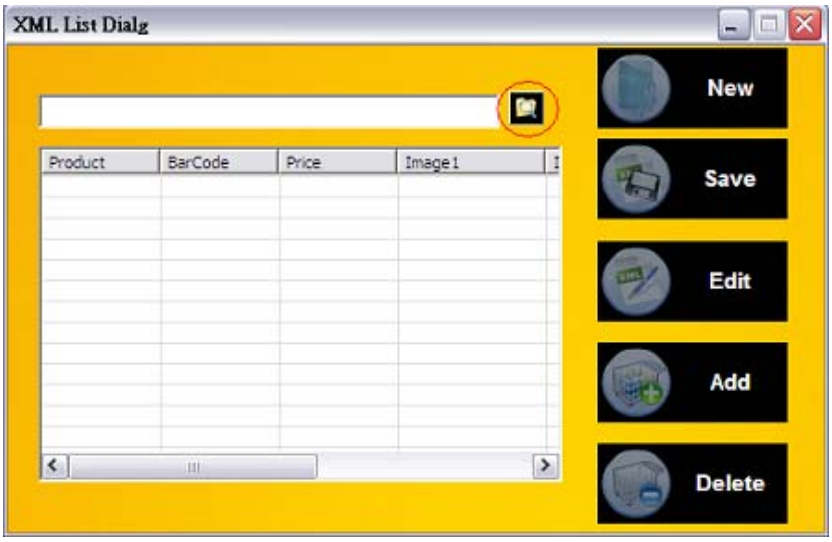


Figure 4–4: XML List Dialog

Step 6: The location of the XML file is selected and the product information contained in the file is displayed in the space below.

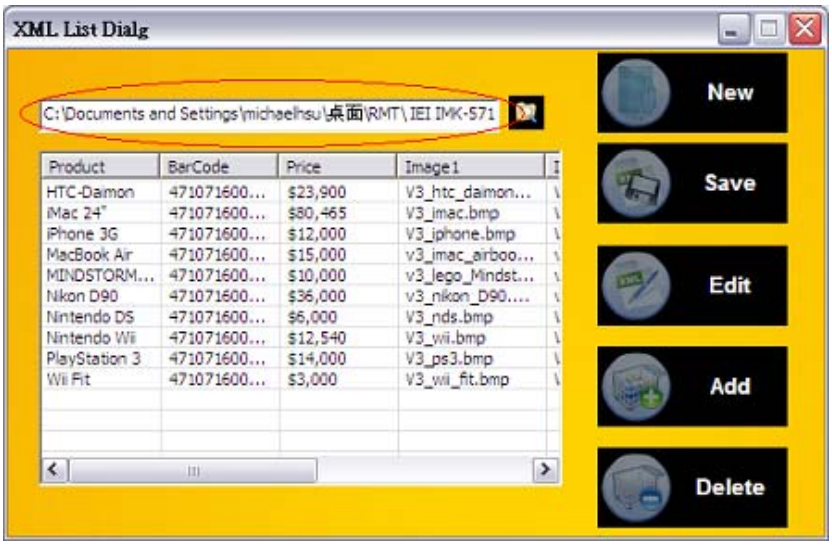


Figure 4–5: XML File Product List

Step 7: Click Save to save any changes. These changes are only saved to the local copy of the XML file.

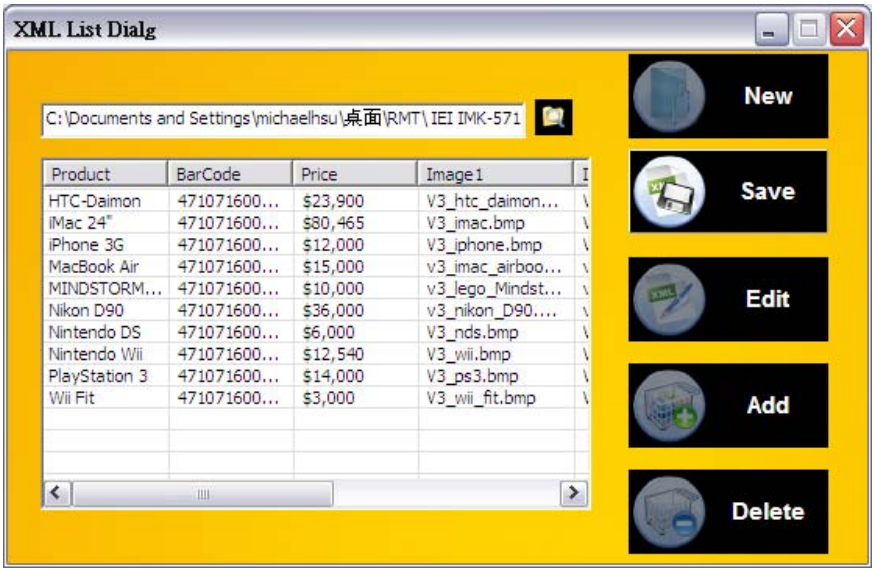


Figure 4–6: Save Local XML Product File

Step 8: Double-click a product item, or select a product item and click "Edit" to change the information for that item.

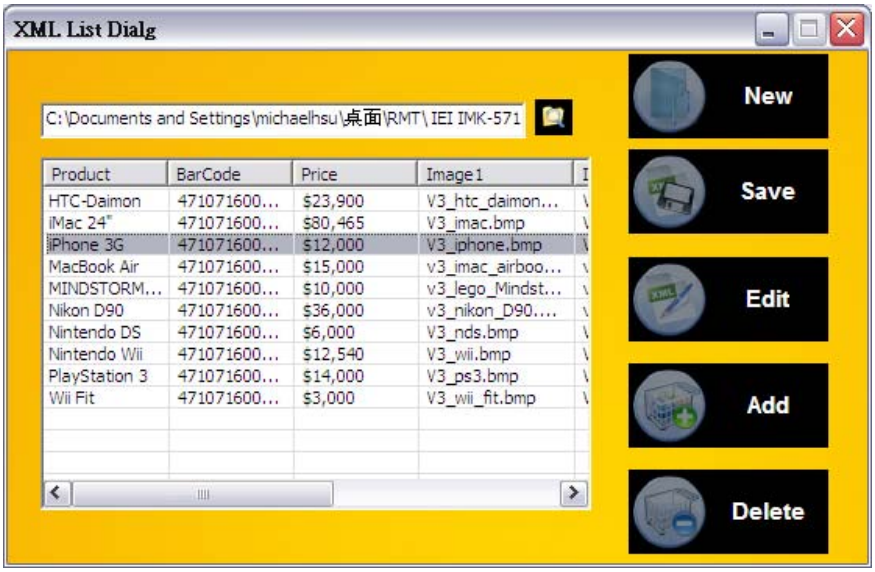


Figure 4–7: Edit Product Information

Step 9: Edit the product information in the dialog box.

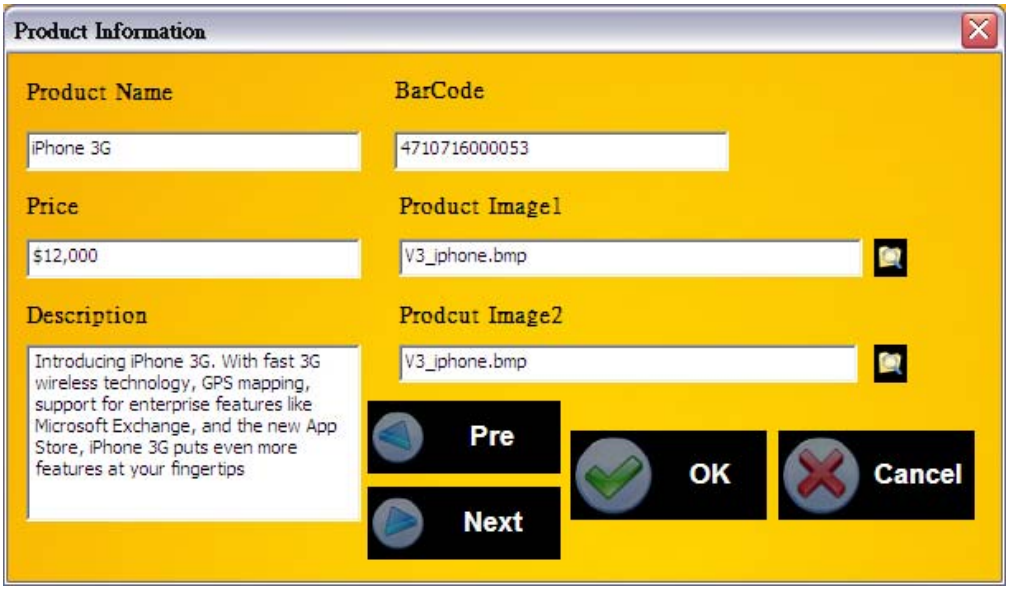


Figure 4–8: Update Product Information

Step 10: Click the "Add" button to add new product information.

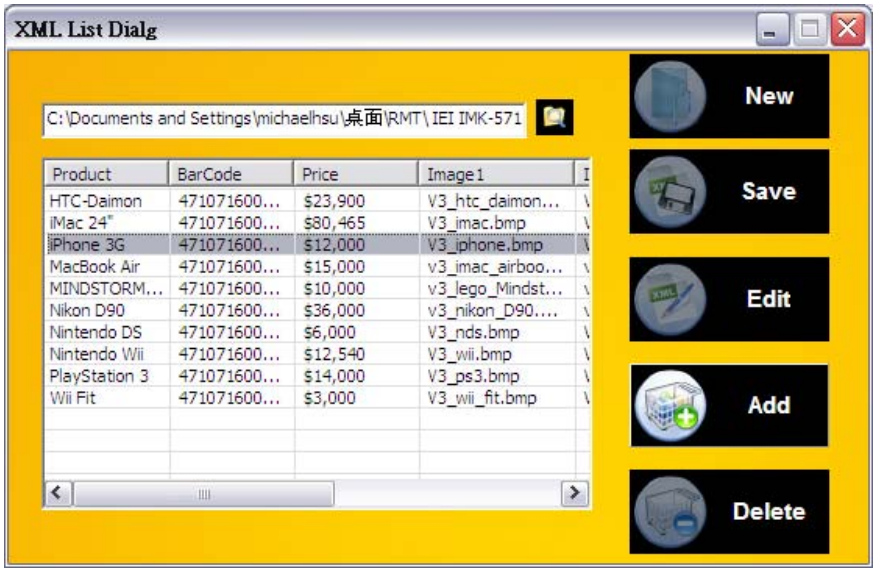


Figure 4 –9: Add New Product

Step 11:

Enter the new product information and click OK to apply the settings.

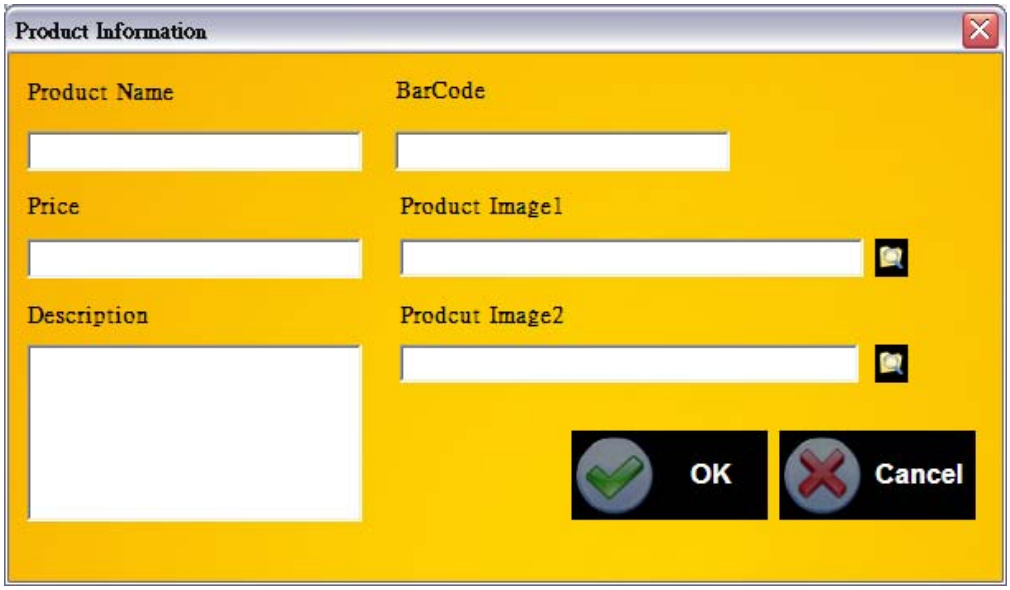


Figure 4–10: Add New Product Dialog

Step 12: Click Delete to delete the selected product. If no product is selected, the first item in the list will be deleted.

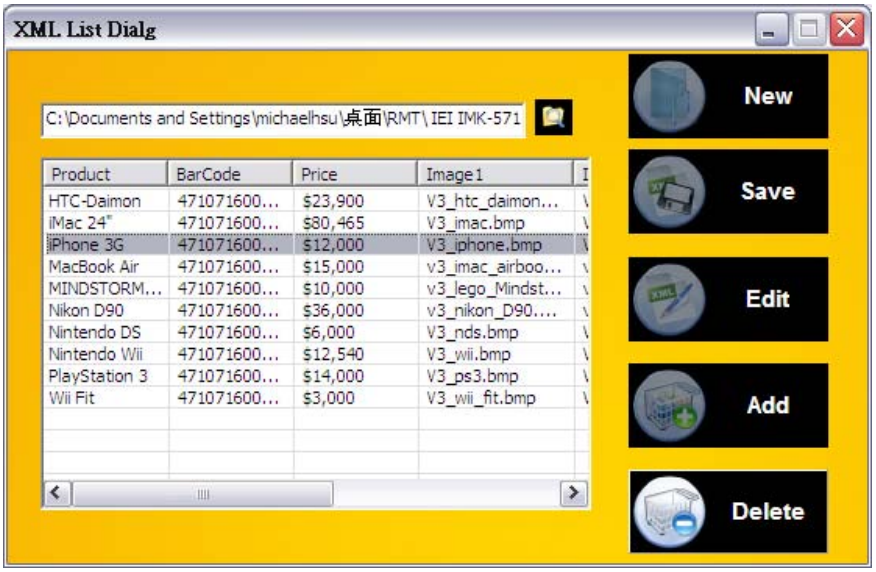


Figure 4–11: Delete Product from XML File

4.3 Scanning for XML Files on the Network Subnet

Step 1: The subnet is automatically selected according to the current network settings.

To select a different subnet, just change this value.

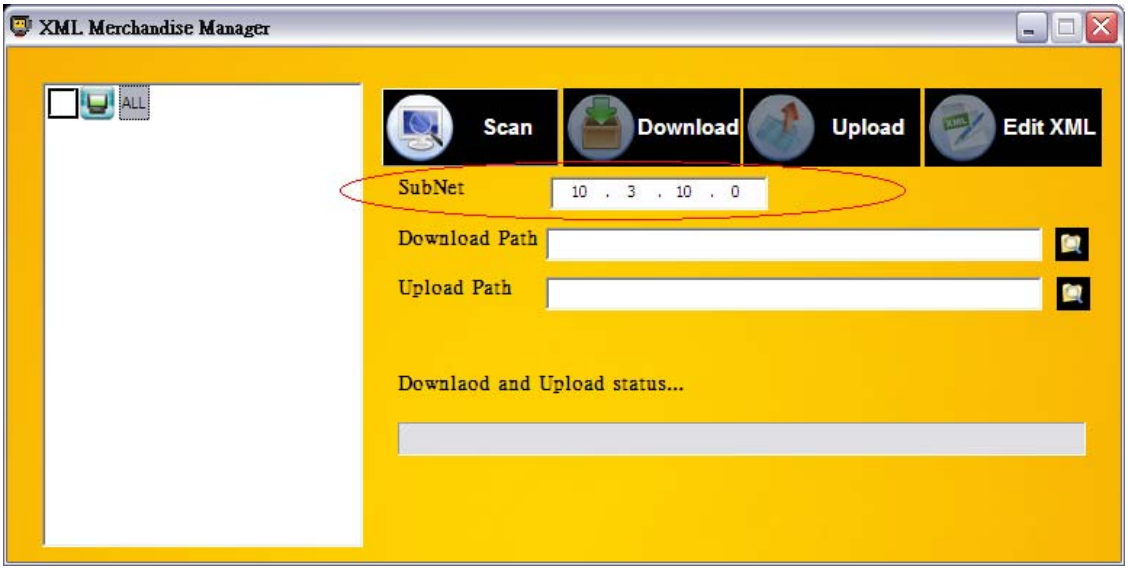


Figure 4–12: Scan Subnet

Step 2: Double-click a list itemDouble-click any list item to get a popup of the target computer's IMK web browser-based configuration tool.

Figure 4–13: Web Interface

4.4 Downloading XML Files from IMK-571R

Step 1: Click the download button to start downloading the selected items.

Step 2: Select the current Download location of the XML files

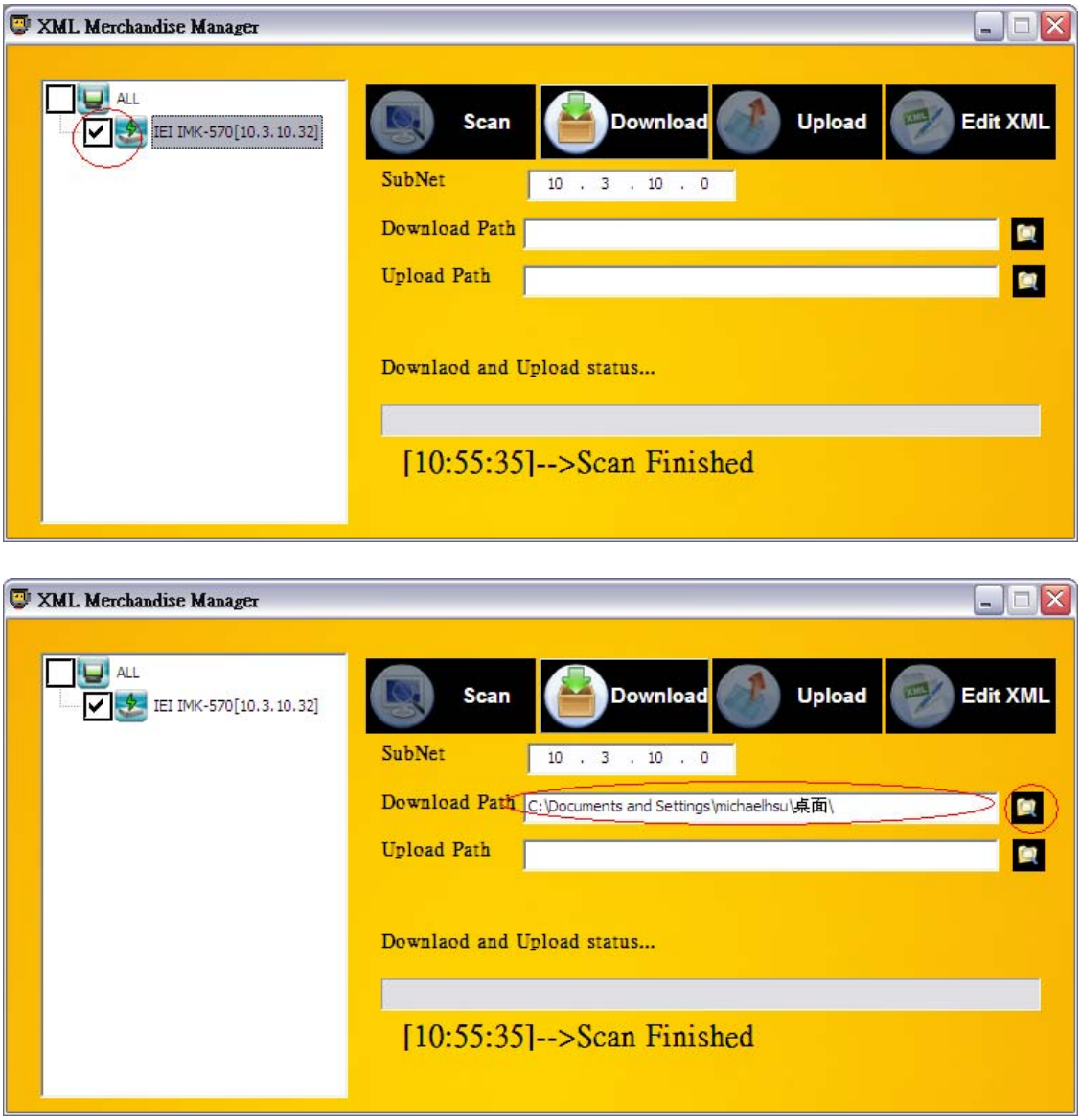
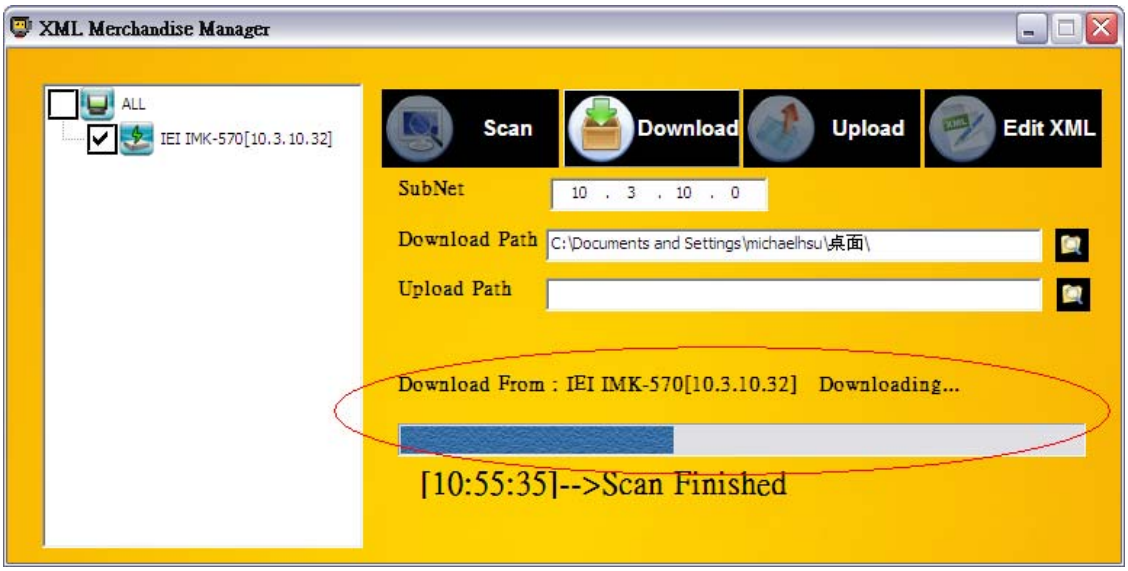


Figure 4–14: Remote File List

Step 3: Confirm the download of the XML files. Click Yes to download the files or No to go back.

Figure 4–15: Download Confirmation

Step 4: The download progress is shown in the progress column.



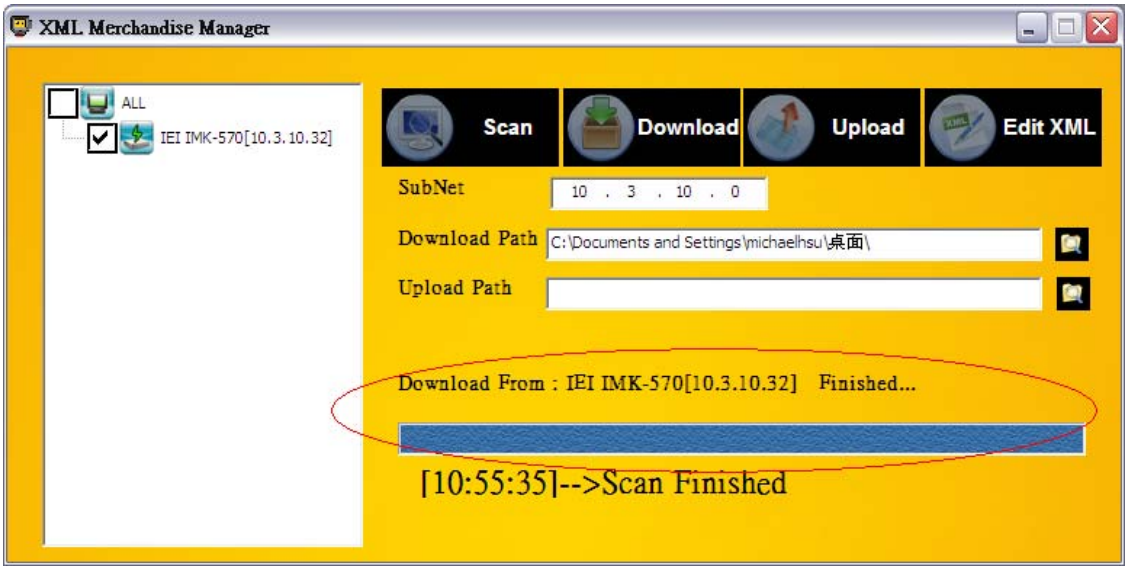


Figure 4–16: Download Progress

4.5 Uploading XML Files to IMK-571R

Step 1: Select the path of the XML file to upload.

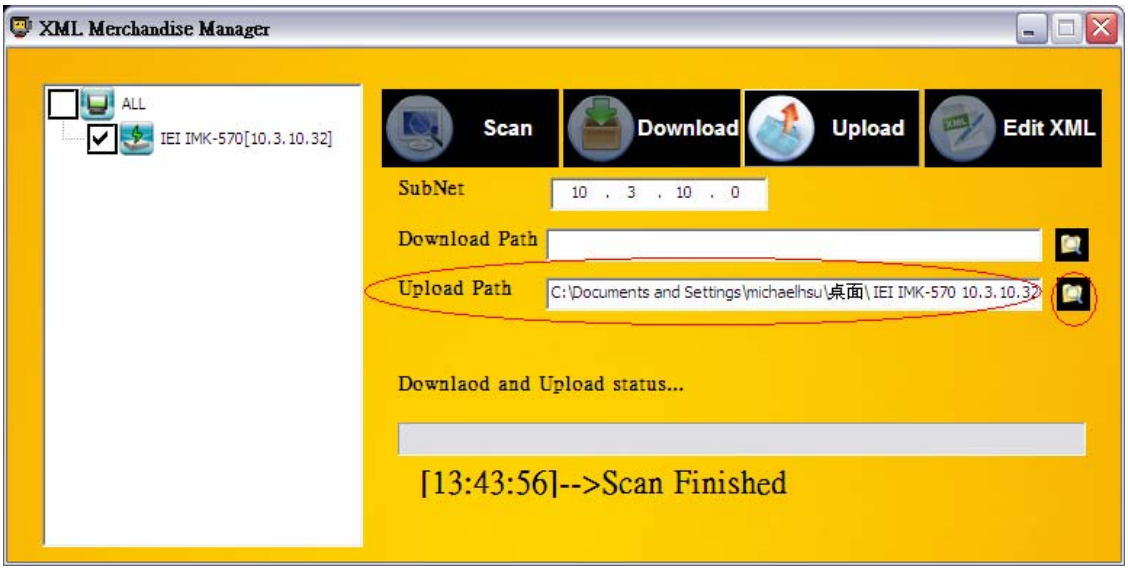


Figure 4–17: Local Product File Selection

Step 2: Select the target computer to upload to.

Step 3: Click the upload button to start uploading.

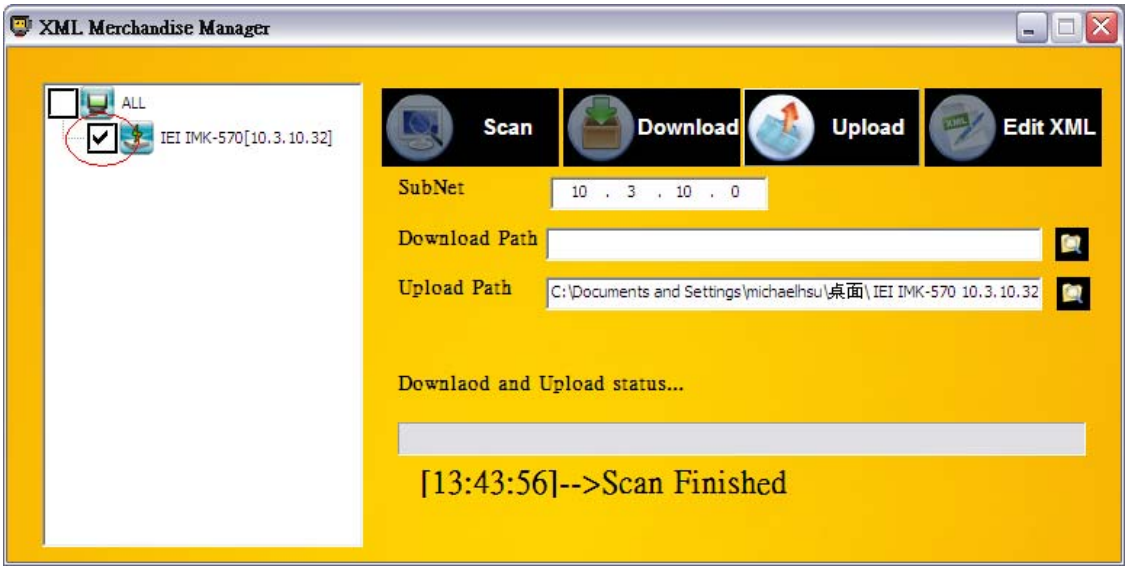


Figure 4–18: Product File Upload

Step 4: Click Yes to start uploading the file or No to cancel.

Figure 4–19: Product Upload Confirmation

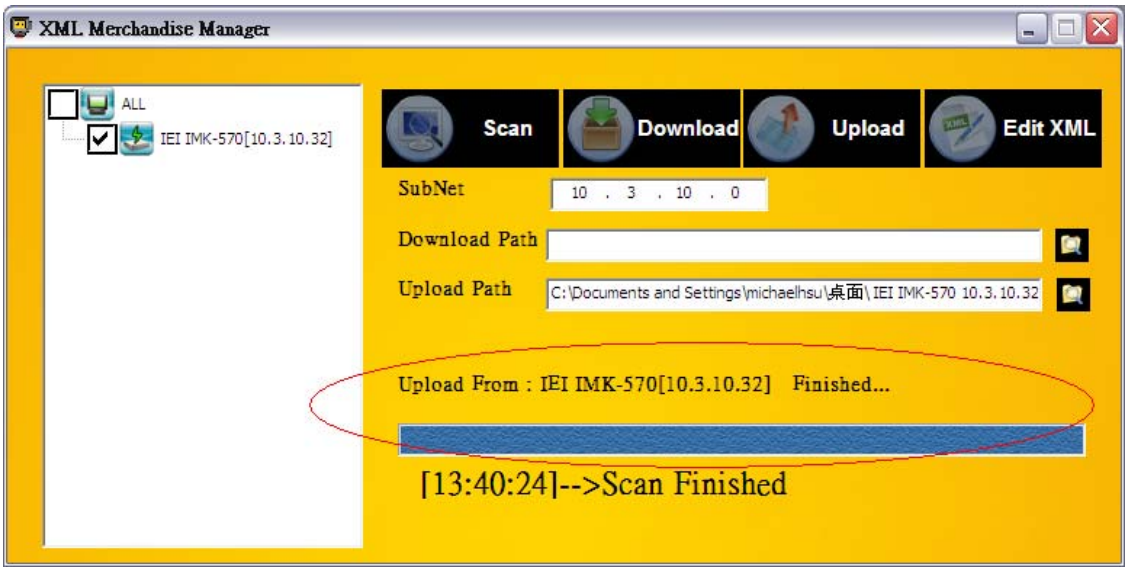


Figure 4–20: Upload Progress Bar

Chapter

5

IMK Web Interface

5.1 IMK Web Interface Main Page

Figure 5–1: Main Screen

5.2 System Settings Pages

Adjust the main settings of the IMK-571R.

5.2.1 Main Page

The main system settings page.

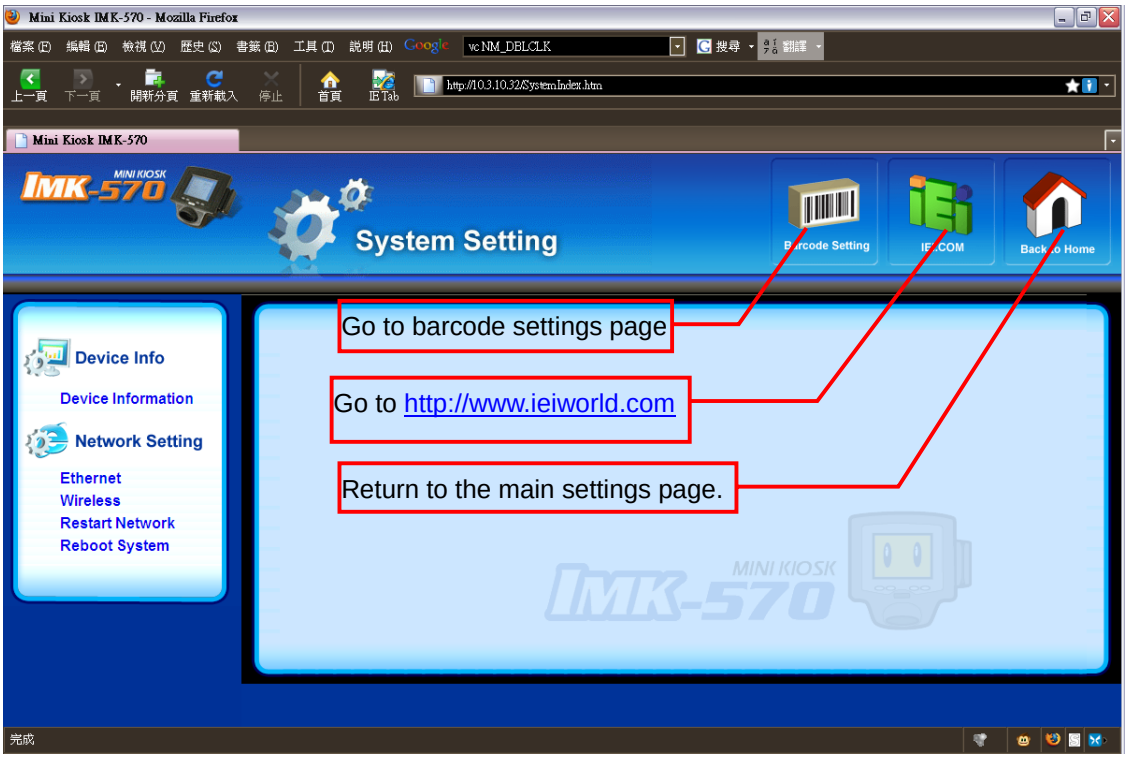


Figure 5–2: Main System Settings Page

5.2.2 Device Information

Displays general system information.

Figure 5–3: Device Information (System Settings Page)

5.2.3 Ethernet

Shows Ethernet settings.

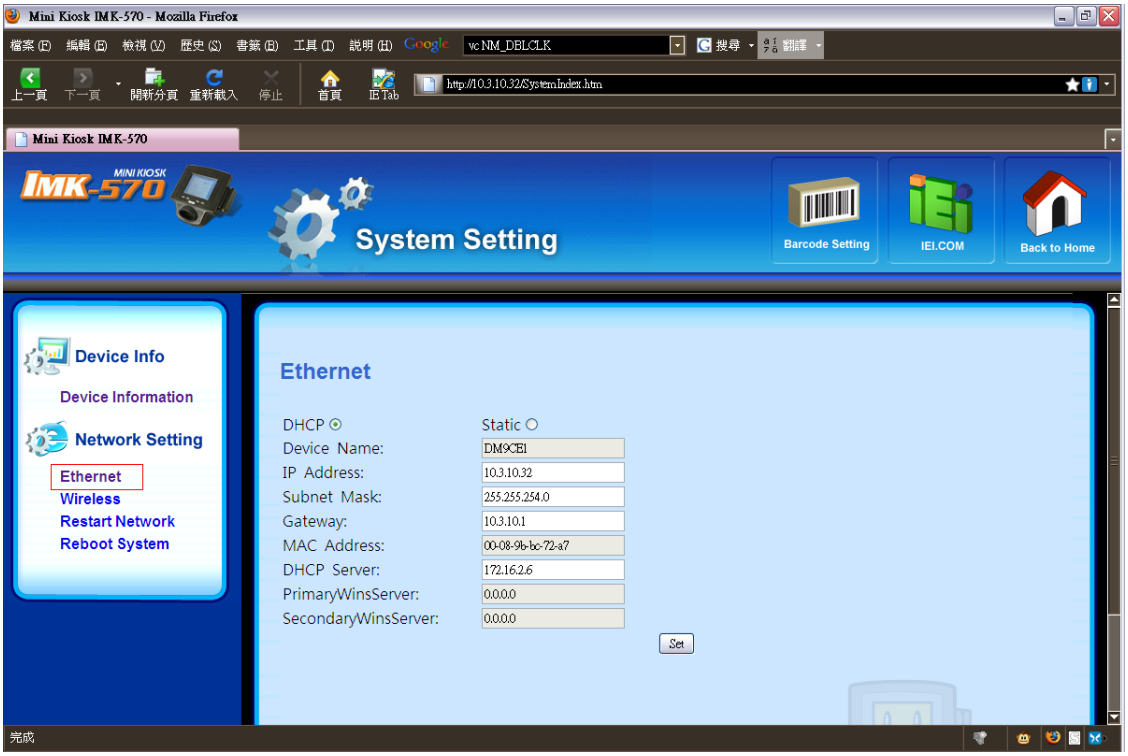


Figure 5–4: Ethernet (System Settings Page)

5.2.4 Wireless

Show the target device's Wireless information.

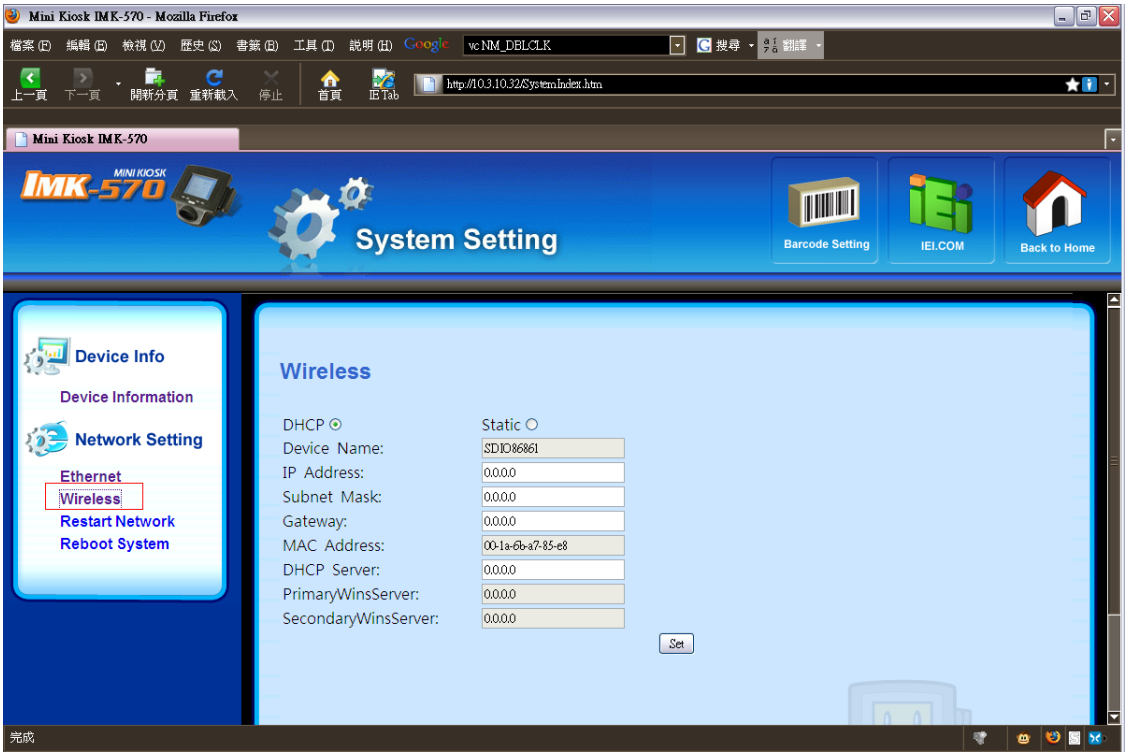


Figure 5–5: Wireless (System Settings Page)

5.2.5 Restart Network

Reset the network connection on the connected IMK-571R.

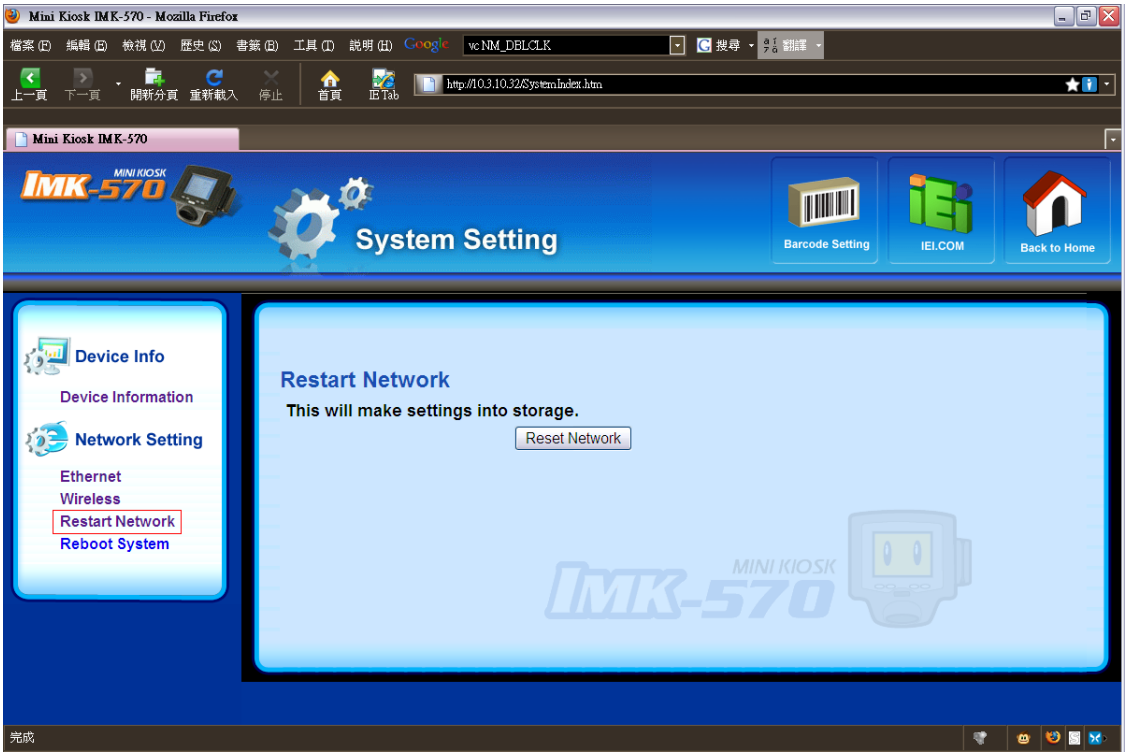


Figure 5–6: Restart Network (System Settings Page)

5.2.6 Reboot System

Restart the IMK-571R.

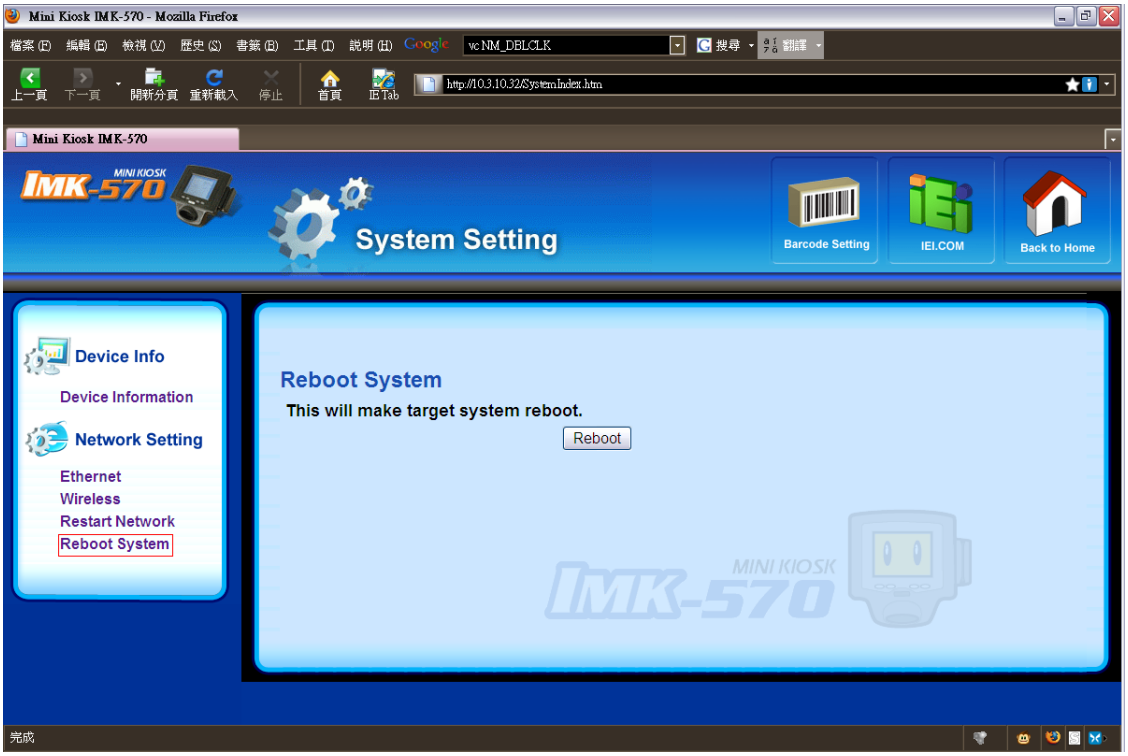


Figure 5–7: Reboot System (System Settings Page)

5.3 Barcode Settings Pages

5.3.1 Main Frame

The main barcode settings page.

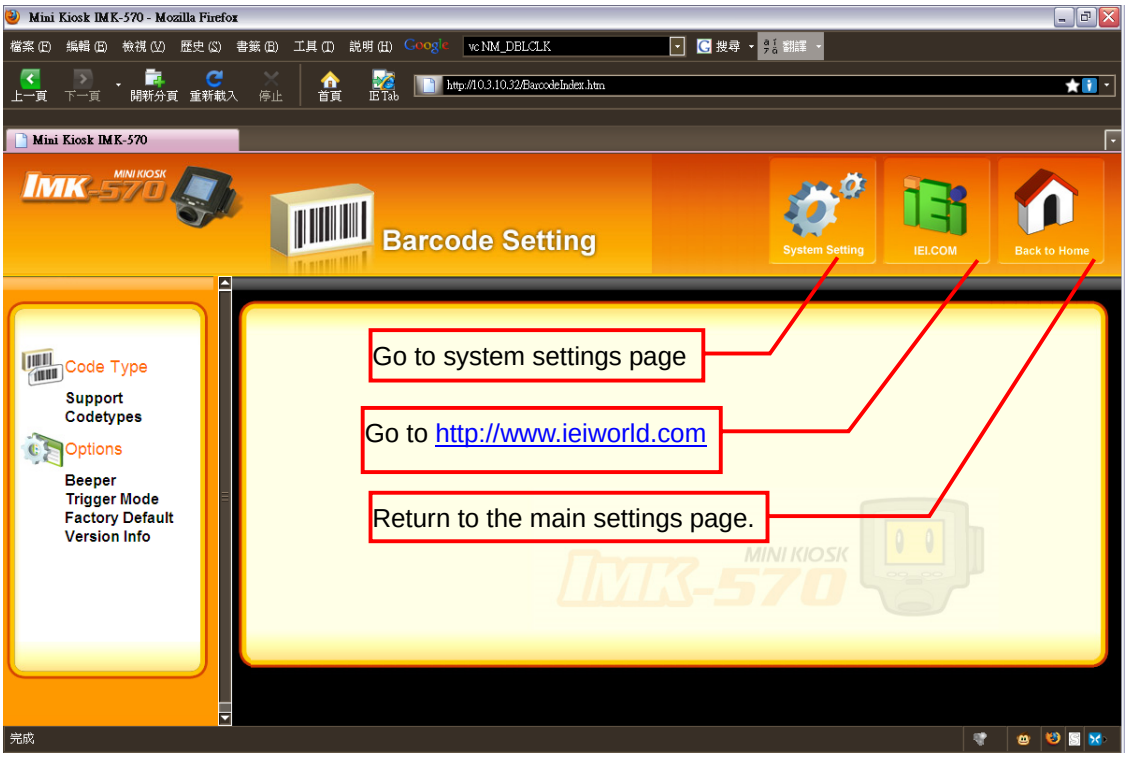


Figure 5–8: Main Barcode Settings Page

5.3.2 Support Codetypes

Set the supporting codetypes for scanned barcodes.

Figure 5–9: Supported Codetypes (Barcode Settings Page)

5.3.3 Beeper Option

Sets the system beeper.

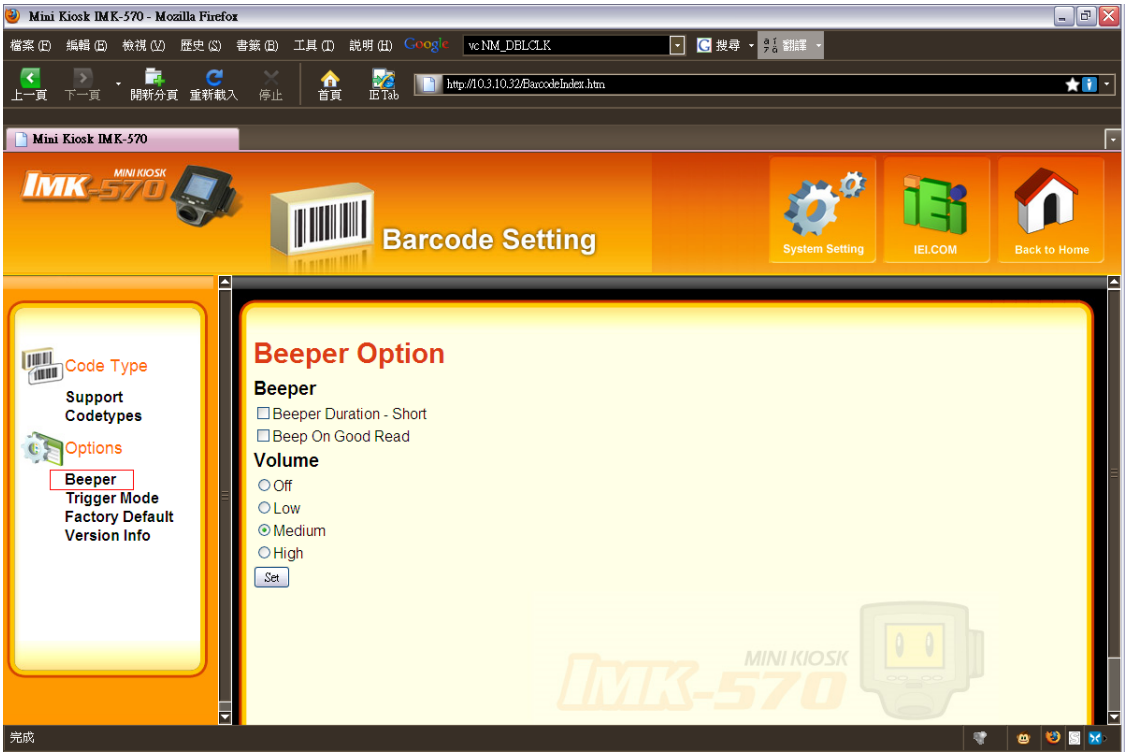


Figure 5–10: Beeper Option (Barcode Setting Page)

5.3.4 Trigger Mode

Set the mode for the barcode scanner.

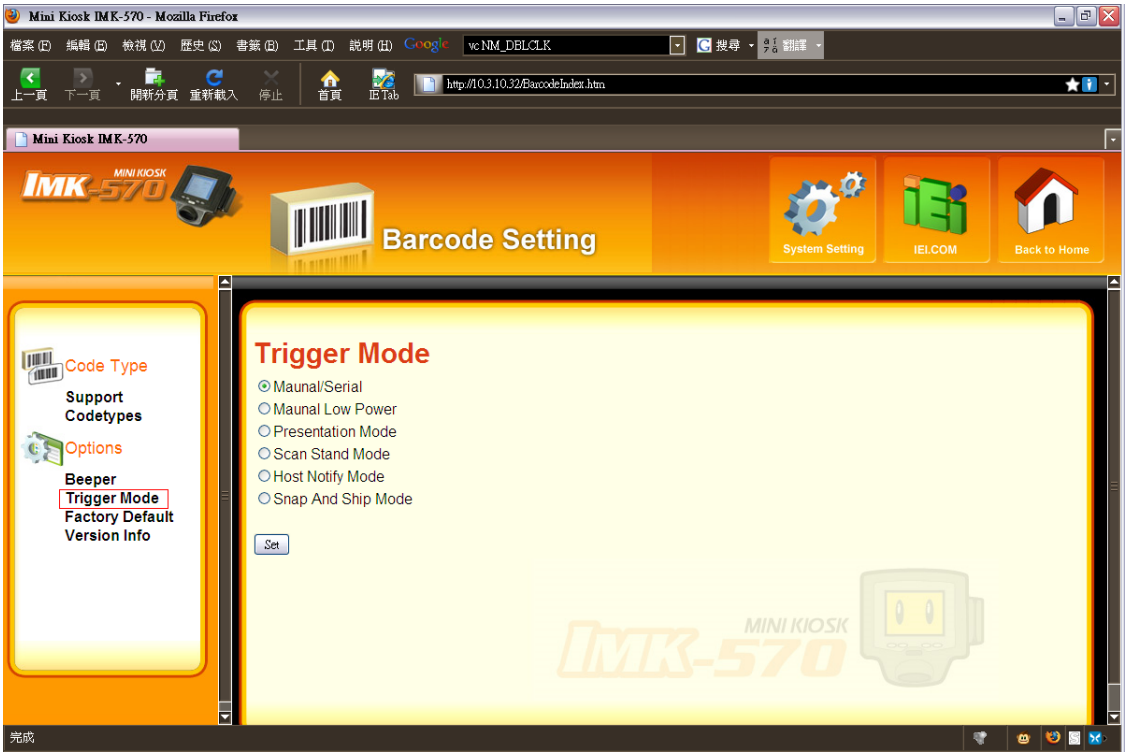


Figure 5–11: Trigger Mode (Barcode Settings Page)

5.3.5 Factory Default

Sets the selected items to the system default.

Figure 5–12: Factory Default (Barcode Settings Page)

5.3.6 Version Information

View the barcode information from the last scanned item.

Figure 5–13: Version Information (Barcode Settings Page)

Chapter

6

General Software Development

6.1 Application Development Environment

This chapter describes the development environment required for developing applications to run on IEI ALCHEMY AU1250 Windows CE devices, as well as the software environment including the libraries, definition files, and the platform SDK (hereafter referred to as SDK).

6.1.1 Hardware Environment

The following describes the hardware configuration required for developing and running Windows CE applications.

Connect your IEI Windows CE device to a personal computer for developing applications and download your application from the personal computer to Windows CE device and run the application.

The following describes the personal computer hardware required to develop applications. Refer to the hardware environment specifications of each package for details.

< Required Personal Computer Hardware Environment >

Item	Requirements
Operating System	Microsoft® Windows 2000 Professional Service Pack 4 or later. Microsoft® Windows XP Professional Service Pack 1 or later.
Computer	Windows compatible personal computer with Pentium processor (Pentium-II 450 MHz or faster processor is recommended)
Memory	Windows 2000 Professional: 96MB minimum Windows XP Professional: 160MB minimum
Hard Disk Requirement	eMbedded Visual C++: 120MB minimum Visual Studio .NET 2003: 900MB minimum, 3.3GB for data. At least 150MB on the SDK.
Disk Device	CD-ROM

Item	Requirements
Communication Port	Required: USB port (USB1.1 or higher) Optional: Second USB port, serial port, and LAN port (10BASE-T/100BASE-TX)

Table 6–1: Hardware Requirements

6.1.2 Software Environment

The following are the software environment requirements.

Item Name	Notes
eMbedded Visual C++ 4.0 SP4 (or newer) or Visual Studio .NET 2003	eMbedded Visual C++ 4.0, Visual Studio .NET 2003 are not included, they can be bought from your nearest software vendor. The available development language is Visual Basic .NET. If developing applications in Visual Studio .NET 2003, Windows CE Utilities for Visual Studio .NET 2003 add-on pack 1.1 is required, and can be downloaded from MSN.
IEI ALCHEMY AU1250 Windows CE 5.0 SDK	Includes standard Windows CE library files. Also includes library files and header files that have access to IEI's unique hardware.
ActiveSync	Syncs the device and the personal computer. Downloadable from MSDN. ActiveSync 3.7.1 (Japanese/English version) or ActiveSync 3.8 (English version) or newer required.

Table 6–2: Software Requirements

6.2 Installing Application Development Tools

Before installing the application development tools, make sure all the hardware and software requirements have been met.

To install the application development tools, follow the procedure below.

1. Install the eMbedded Visual C++ 4.0 or the Visual Studio .NET 2003.

2. Install any service packs and update the software
3. Install the IEI ALCHEMY AU1250 Windows CE 5.0 SDK.
4. Install ActiveSync

If you use an emulator, install the component of Standard SDK for Windows CE. Select **MIPSII** of eMbedded Visual C++ 4.0. If you use the emulator, select **WCE emulator**.

- Installing the Service Pack etc.

If you use the eMbedded Visual C++ 4.0, install the Service Pack 4 (or above).

If you use Visual Studio .NET 2003, install the Windows CE utilities for Visual Studio .NET 2003 add-on pack 1.1.

6.2.1 Installing the IEI ALCHEMY Windows CE 5.0 SDK

The SDK is the set of headers, libraries, help documentation, platform manager files, run-time files and platform extension for writing programs for Windows CE.

The following step illustrates the SDK installation guide:

Step 1: Run the product CD-ROM (\IEI ALCHEMY AU1250 Windows CE 5.0 SDK), double click **IEI_MIPSII_SDK.MSI** package file to install the SDK. Then click **Next**.

Figure 6–1: SDK Installation File

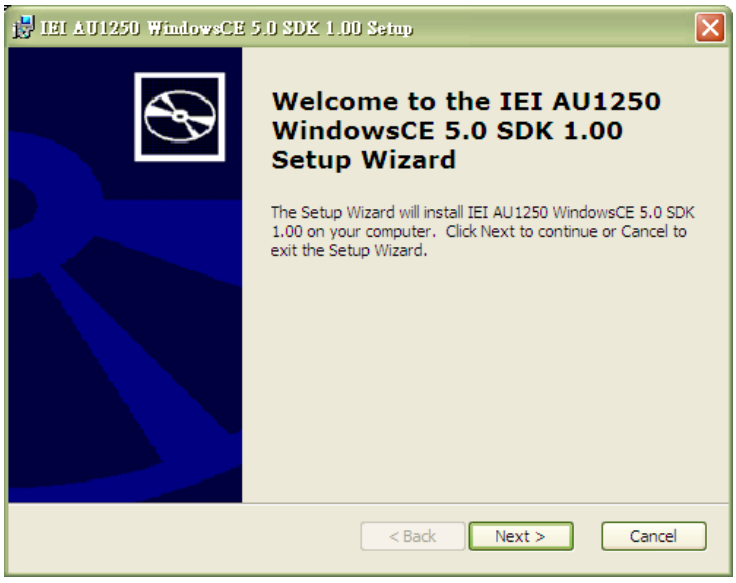

IEI AU1250 WindowsCE 5.0 SDK 1.00 Setup
Welcome to the IEI AU1250 WindowsCE 5.0 SDK 1.00 Setup Wizard
The Setup Wizard will install IEI AU1250 WindowsCE 5.0 SDK 1.00 on your computer. Click Next to continue or Cancel to exit the Setup Wizard.
< Back
Next >
Cancel

Figure 6–2: SDK Installation Welcome Screen

Step 2: Read the End-User License Agreement carefully. Select **Accept** and click **Next**.

IEI AU1250 WindowsCE 5.0 SDK 1.00 License Agreement
End-User License Agreement
Be sure to carefully read and understand the following end-user license agreement, and then indicate whether you accept or do not accept the terms of the agreement.
This software will not set up on your computer unless you accept the terms of the agreement. For your future reference, you may print the text of the agreement now using the PRINT button or obtain the text from the 'MSFT_SDK_EULA_1033.rtf' file after installation. You may also receive a copy of this agreement by contacting the Microsoft subsidiary serving your country, or write: Microsoft Sales Information Center, One Microsoft Way, Redmond WA 98052-6399.
END-USER LICENSE AGREEMENT FOR MICROSOFT SOFTWARE
MICROSOFT CUSTOM SOFTWARE DEVELOPMENT KIT FOR WINDOWS CE 5.0
(Referred to as the "Microsoft Custom SDK")
Press the PAGE DOWN key to see more text.
Accept
Decline
Print
< Back
Next >
Cancel

Figure 6–3: SDK License Agreement

Step 3: Enter customer information. Then click **Next**.

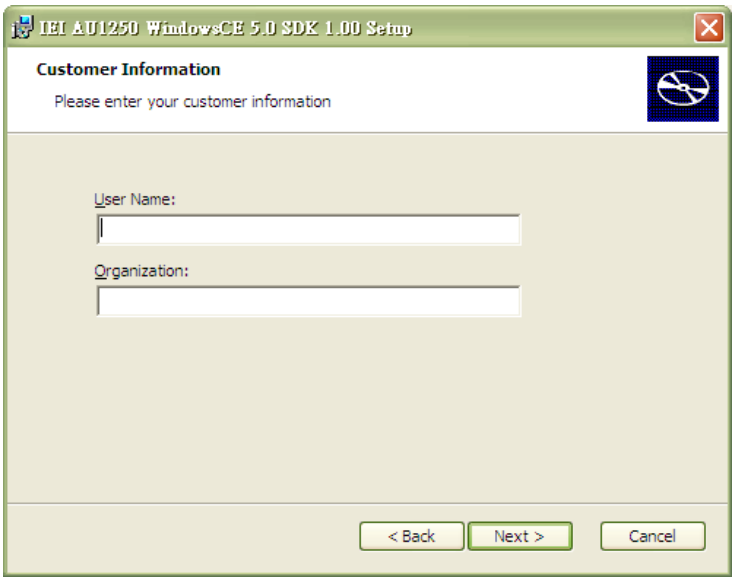


Figure 6–4: SDK Customer Information

Step 4: Choose setup type. User can choose development program language such as Embedded Virtual C++ 4.0 or .NET Compact Framework. Then click **Next**.

Step 5: Select **Complete** to install the whole program, to just install specific parts, select **Custom**.

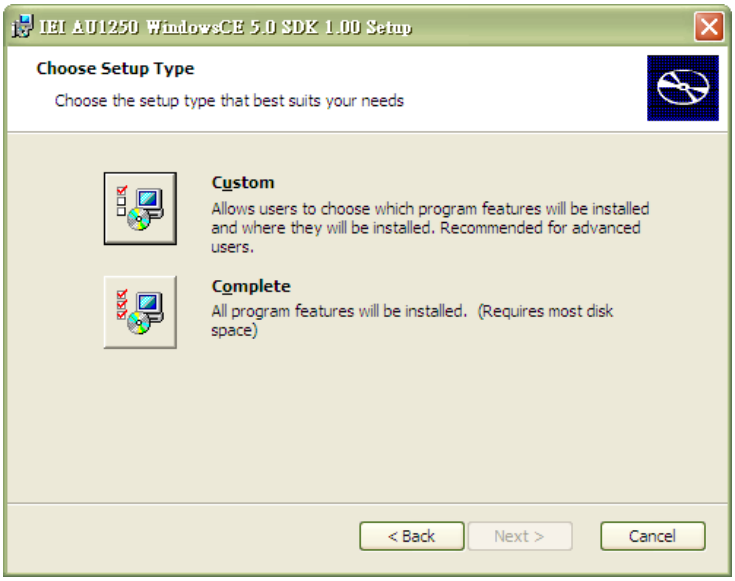

IEI AU1250 WindowsCE 5.0 SDK 1.00 Setup
Choose Setup Type
Choose the setup type that best suits your needs
Custom
Allows users to choose which program features will be installed and where they will be installed. Recommended for advanced users.
Complete
All program features will be installed. (Requires most disk space)
< Back
Next >
Cancel

Figure 6–5: SDK Setup Type Selection

Step 6: If you selected **Custom**, set the components and the location. If you select **Complete**, set the component location only.

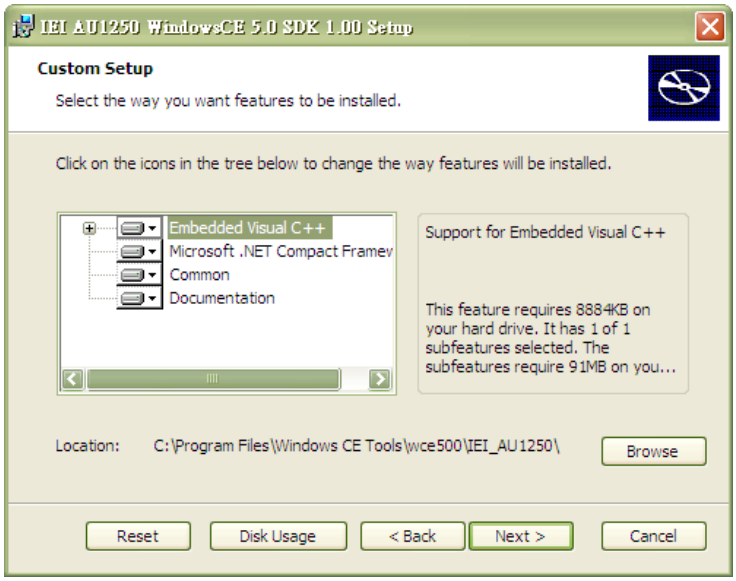

IEI AU1250 WindowsCE 5.0 SDK 1.00 Setup
Custom Setup
Select the way you want features to be installed.
Click on the icons in the tree below to change the way features will be installed.
Embedded Visual C++
Microsoft .NET Compact Framev
Common
Documentation
Support for Embedded Visual C++
This feature requires 8884KB on your hard drive. It has 1 of 1 subfeatures selected. The subfeatures require 91MB on you...
Location:
C:\Program Files\Windows CE Tools\wce500\IEI_AU1250\
Browse
Reset
Disk Usage
< Back
Next >
Cancel

Figure 6–6: SDK Custom Setup Options

Step 7: Set destination folders to install SDK. Then click **Next**.

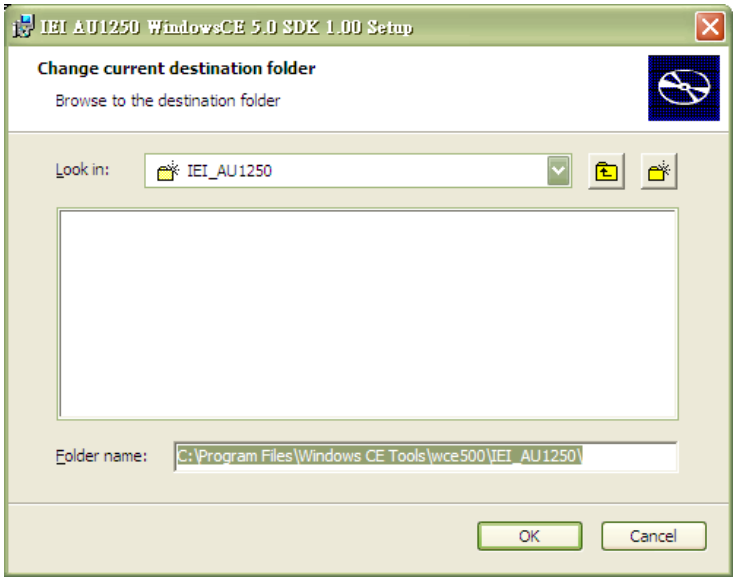


Figure 6–7: SDK Destination Folder Selection

Step 8: Click **Install** to begin the installation.

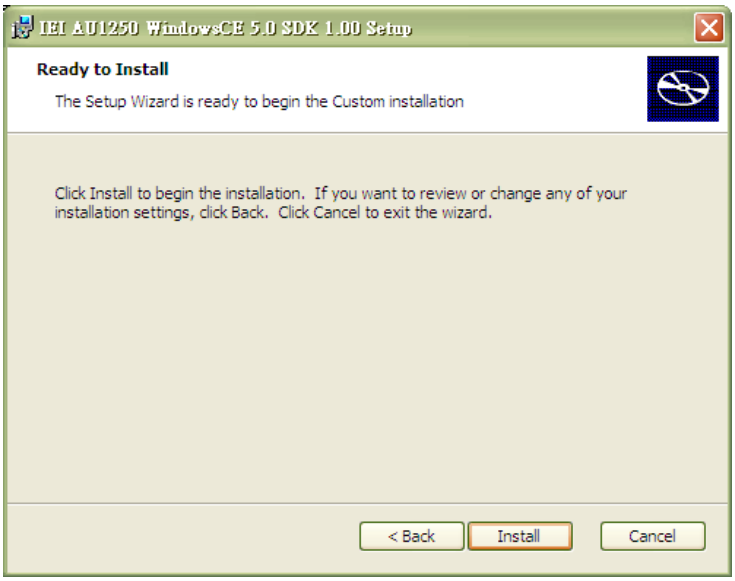

IEI AU1250 WindowsCE 5.0 SDK 1.00 Setup
Ready to Install
The Setup Wizard is ready to begin the Custom installation
Click Install to begin the installation. If you want to review or change any of your installation settings, click Back. Click Cancel to exit the wizard.
< Back
Install
Cancel

Figure 6–8: SDK Ready to Install

Step 9: Install SDK.

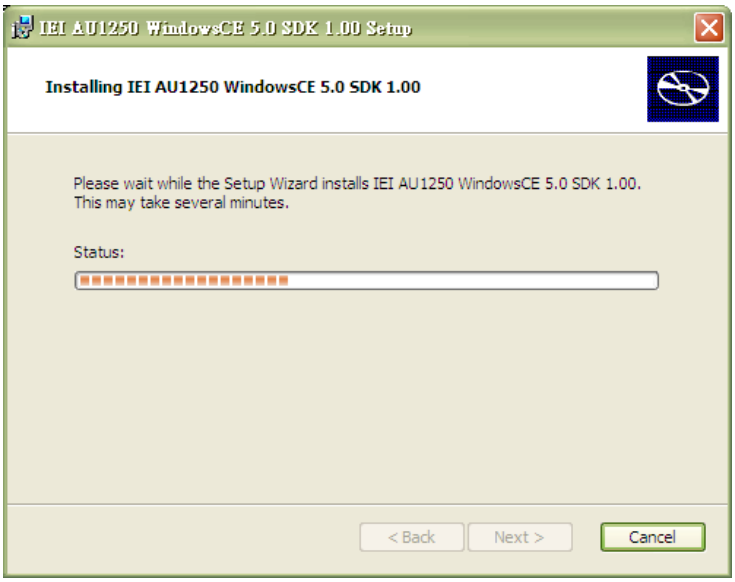

IEI AU1250 WindowsCE 5.0 SDK 1.00 Setup
Installing IEI AU1250 WindowsCE 5.0 SDK 1.00
Please wait while the Setup Wizard installs IEI AU1250 WindowsCE 5.0 SDK 1.00. This may take several minutes.
Status:
< Back
Next >
Cancel

Figure 6–9: SDK Installation Progress Bar

Step 10: **Step 8:** Click **Finish** to complete the SDK installation.

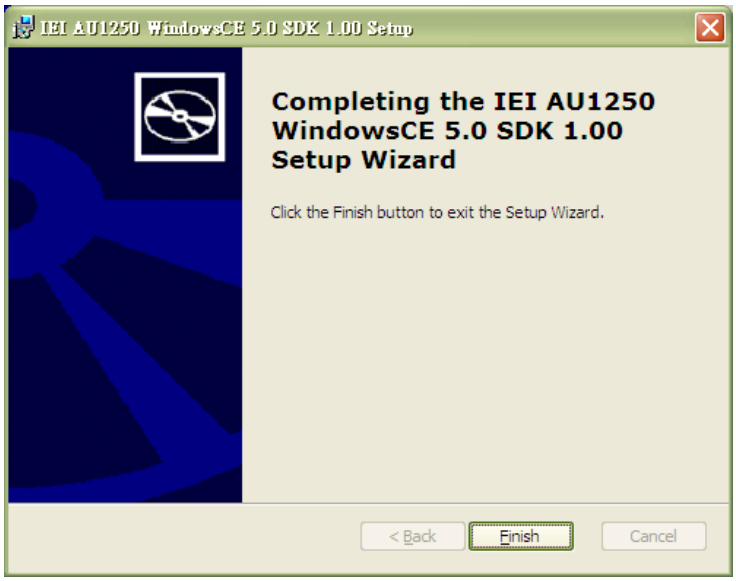

IEI AU1250 WindowsCE 5.0 SDK 1.00 Setup
Completing the IEI AU1250 WindowsCE 5.0 SDK 1.00 Setup Wizard
Click the Finish button to exit the Setup Wizard.
< Back
Finish
Cancel

Figure 6–10: SDK Installation Complete

6.3 Installing ActiveSync

To install the ActiveSync to the personal computer for developing applications, visit the Microsoft® Windows Mobile site at http://www.microsoft.com/windowsmobile/downloads/activesync38.mspx. When a message pops up to ask to connect, click **Cancel**.

6.3.1 Establishing a Connection via ActiveSync

To transfer a program from the personal computer for developing applications to an IEI Windows CE device and then debug the program while it is running on an IEI Windows CE device, use ActiveSync to establish the connection between the personal computer and an IEI Windows CE device.

It is required to install ActiveSync on the personal computer for developing applications in advance. To establish the connection, you can use a serial cable.

6.3.2 Connection Procedure Using a Serial Cable

Connect using a serial cable

Step 1: Turn on the IEI Windows CE device, and then connect the personal computer for developing applications with COM1 port of the IEI Windows CE device using a serial cable.

Step 2: Go to "Start Menu -> Settings -> Control Panel".

Step 3: Double click **Network and Dial-up Connection**.

Figure 6–11: Network and Dial-up Connections

Step 4: Double click **Make New Connection**.

Figure 6–12: Make New Connection

Step 5: Enter a name for the connection, then select **Direct Connection** as the connection type. Then click **Next**.

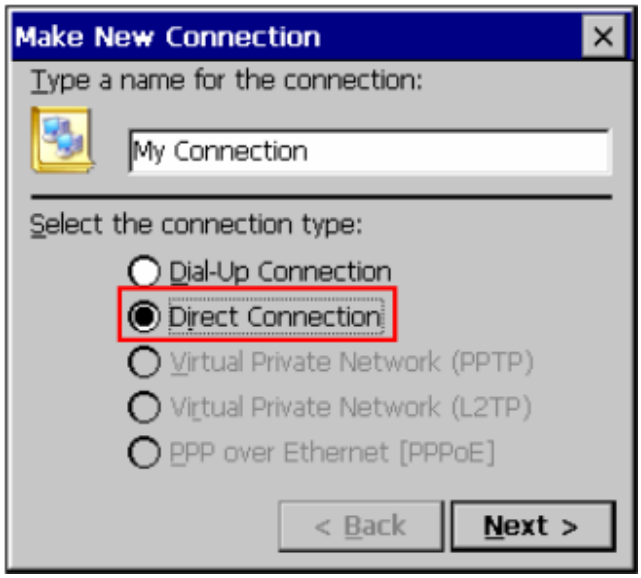


Figure 6–13: Make Direct Connection

Step 6: Select a device. In this example, select **Serial Cable on COM1**.Then click **Configure**.

Figure 6–14: Select Device Connection

Step 7: Set the values as shown below.

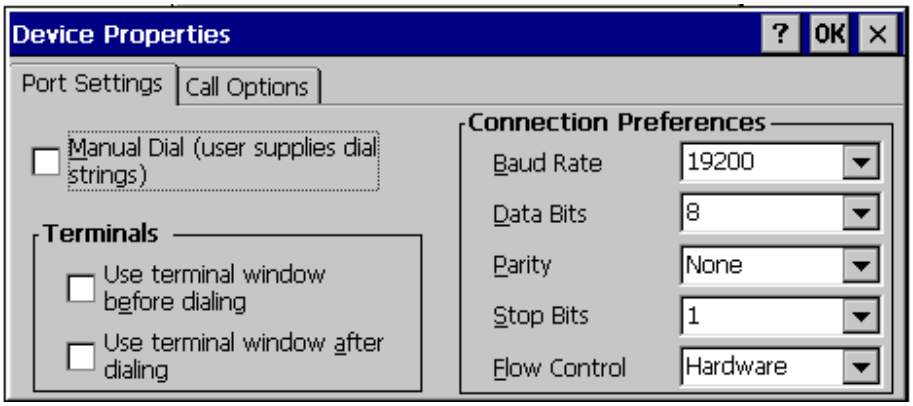


Figure 6–15: Port Settings

Step 8: Go back to Control Panel and double click **PC Connection** to open the [PC Connection Properties] screen.

Figure 6–16: PC Connection

Step 9: Select the connection method to connect to the personal computer if necessary.

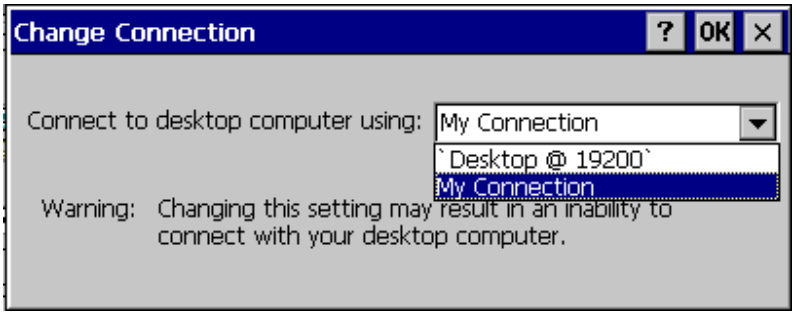


Figure 6–17: Change Connection to My Connection

Step 10: Click **OK** to confirm each setting.

Step 11: Click **Save Registry** on to save settings and reboot.

Figure 6–18: Save Registry

Step 12: On the **Start** menu, click **Run**. Enter **repllog.exe**.

Step 13: Start up the ActiveSync on the personal computer for developing applications. Select **Get Connected** from the **File** menu, and then select the port to connect to the data transfer cable.

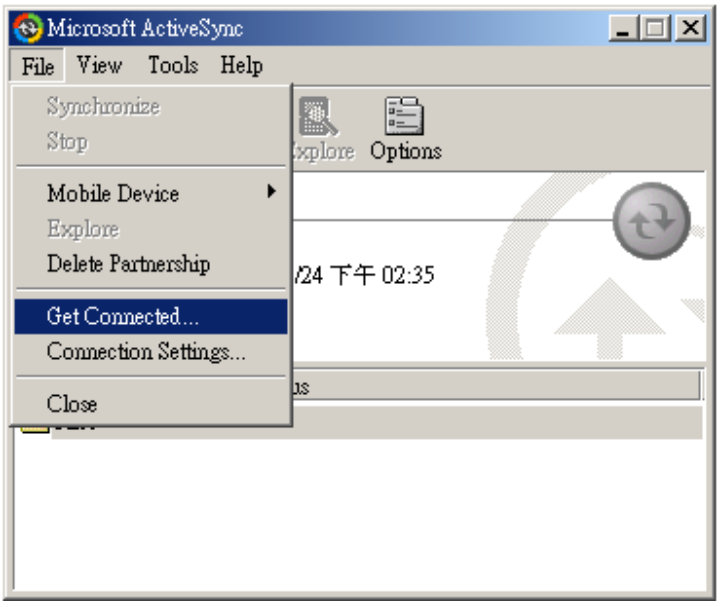


Figure 6–19: Connect With ActiveSync

Step 14: Click **Next** on the dialog, and immediately click **OK** on **Run** dialog on the IEI Windows CE device for executing **repllog.exe**.

Step 15: If the connection between the IEI Windows CE device and the personal computer for developing applications is not established, the following dialog will pop up. Please retry steps (10) and (11). Or run step (11) first and then run step (10).

Step 16: Description of Get Connected:

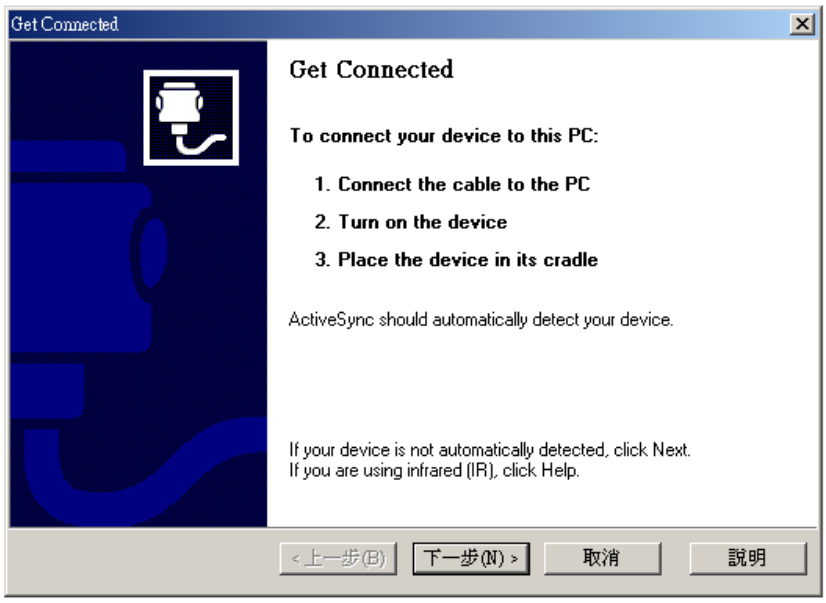

Get Connected
Get Connected
To connect your device to this PC:
1. Connect the cable to the PC
2. Turn on the device
3. Place the device in its cradle
ActiveSync should automatically detect your device.
If your device is not automatically detected, click Next.
If you are using infrared (IR), click Help.
< 上一步(B)
下一步(N) >
取消
說明

Figure 6–20: Connect Device

Step 17: Check COM ports of your IEI Windows CE device from the personal computer.

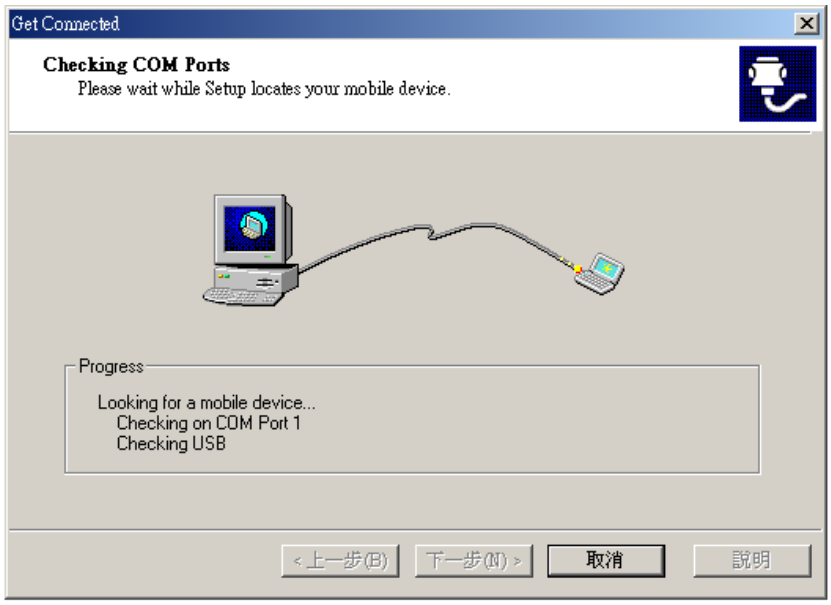


Figure 6–21: Searching for Device

Step 18: After the session is established, the following message will be shown. Select **Yes** or **No** on the **Set Up a Partnership** dialog. If you select **No**, the device will be set as a guest. If you select **Yes**, the IEI Windows CE device will save the connection information.

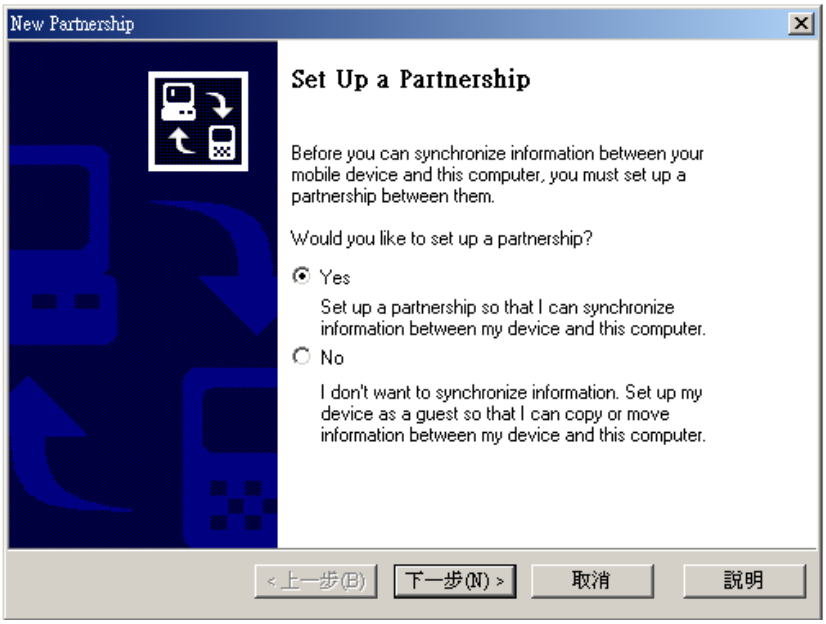

New Partnership
Set Up a Partnership
Before you can synchronize information between your mobile device and this computer, you must set up a partnership between them.
Would you like to set up a partnership?
Yes
Set up a partnership so that I can synchronize information between my device and this computer.
No
I don't want to synchronize information. Set up my device as a guest so that I can copy or move information between my device and this computer.
< 上一步(B)
下一步(N) >
取消
說明

Figure 6–22: Set Up a Partnership

Step 19: Select the items to be synchronized. The settings can be changed after the partnership is created. Click **Next** to continue.

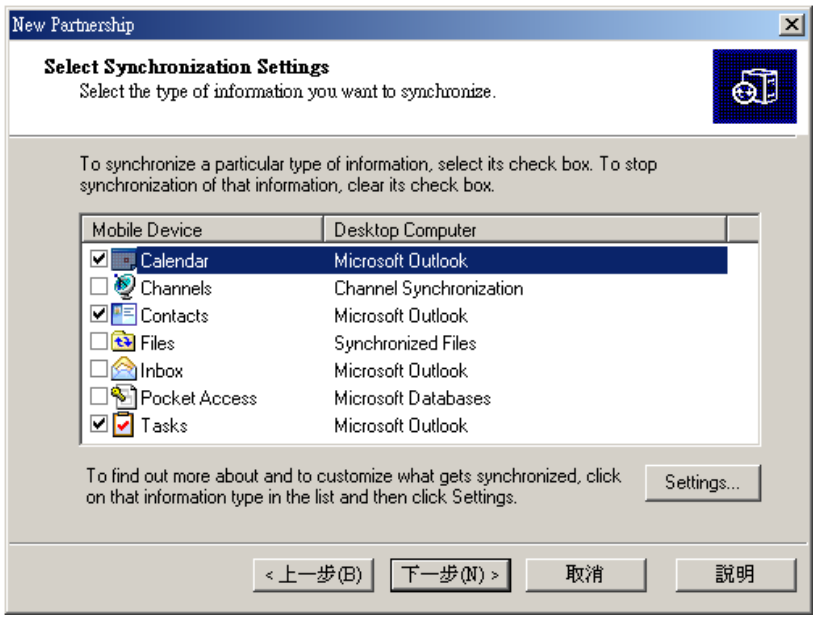


Figure 6–23: Synchronization Settings

Step 20: ActiveSync will display the Setup Complete screen with information of using ActiveSync. Click **Finish**.

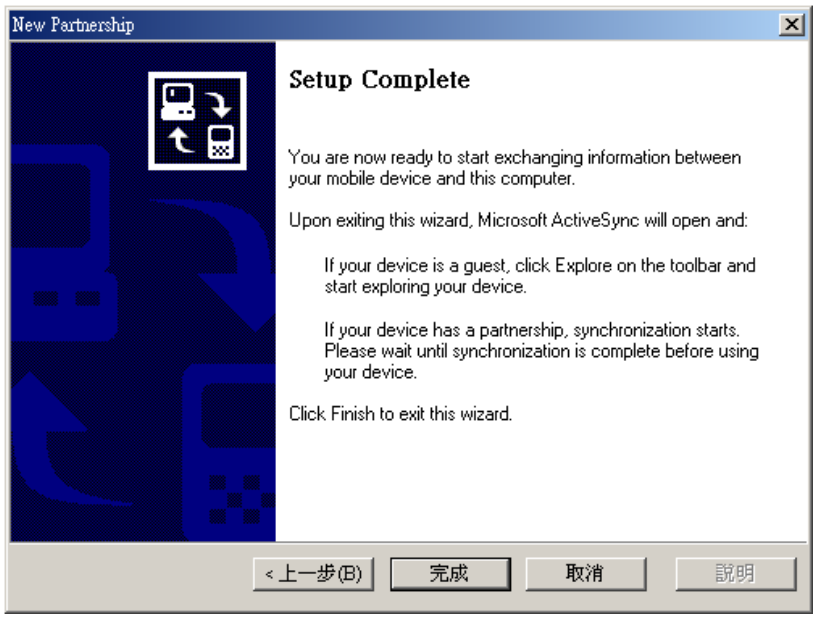

New Partnership
Setup Complete
You are now ready to start exchanging information between your mobile device and this computer.
Upon exiting this wizard, Microsoft ActiveSync will open and:
If your device is a guest, click Explore on the toolbar and start exploring your device.
If your device has a partnership, synchronization starts. Please wait until synchronization is complete before using your device.
Click Finish to exit this wizard.
< 上一步(B)
完成
取消
說明

Figure 6–24: Device Setup Complete

Step 21: Connected Screen

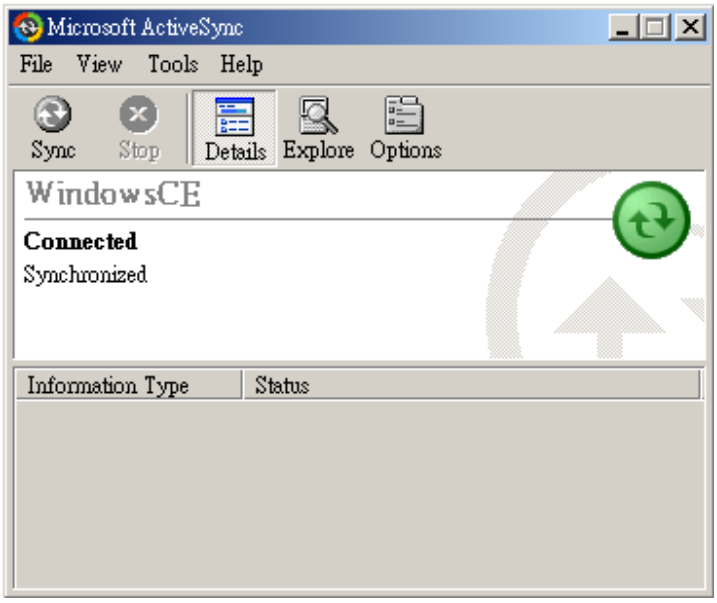


Figure 6–25: Device Connected with ActiveSync

Step 22: Using an Existing Partnership

Once you have set up the partnership as above, it is ready to use. When the netpad and the PC are connected afterwards, it will automatically use the current partnership.

To execute synchronization, make sure the netpad and the PC are already connected.

Step 23: Click **Sync** in the *ActiveSync* window. To stop synchronization, click **Stop**.

Figure 6–26: Stop Synchronization

****** Hard resetting the netpad will delete the partnership on the netpad. You may delete and create the partnership again on the PC, or create a new partnership. Please refer to ActiveSync's online help for more details.

Note: Once connected, ActiveSync will reside in the personal computer, and its connection setting will be kept. It is possible to establish subsequent connections by just starting up **repllog.exe** until the IEI Windows CE device is turned OFF. Save the [PC Connection] setting by selecting Save Registry before turning OFF the IEI Windows CE device, connections can be established by just executing **repllog.exe** even after the IEI Windows CE device is restarted.

6.4 Application Development

6.4.1 Development using eMbedded Visual C++ 4.0

The CPU needs to add **MIPSII** in the setup installation of eMbedded Visual C++ 4.0.

It is necessary to add **WCE emulator** when you debug with the emulator. It is necessary to install [Standard SDK for Windows CE] as well.

The following procedure shows how to display a window on the screen using the embedded Visual C++ 4.0.

6.4.1.1 Creating a Project

Step 1: Start eMbedded Visual C++ 4.0 and select **New** from the **File** menu. In the **Projects** tab, select the type of program to create and input a project name.

Step 2: Select “Win32 [WCE MIPSII]” for CPUs.

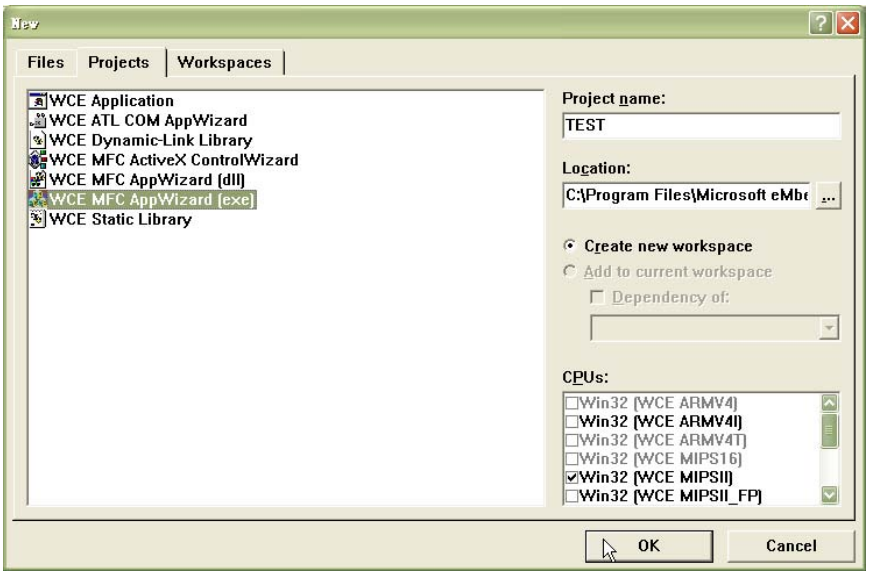


Figure 6–27: Creating a New Project

Step 3: To debug the program by the emulator, select “Win32 [WCE emulator]”.

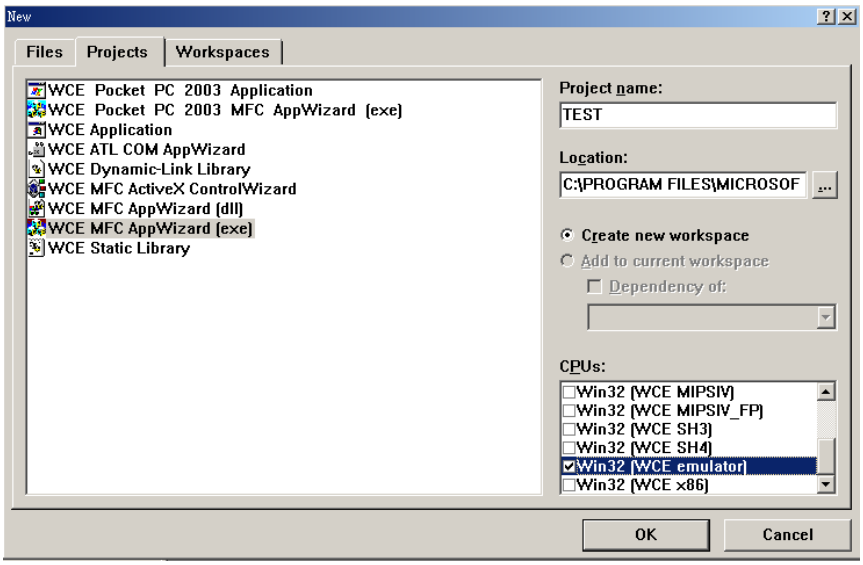


Figure 6–28: Select the VCE Emulator

Step 4: To create a program using a dialog-based interface, select **Single based**. Select the necessary items and click **Next**.

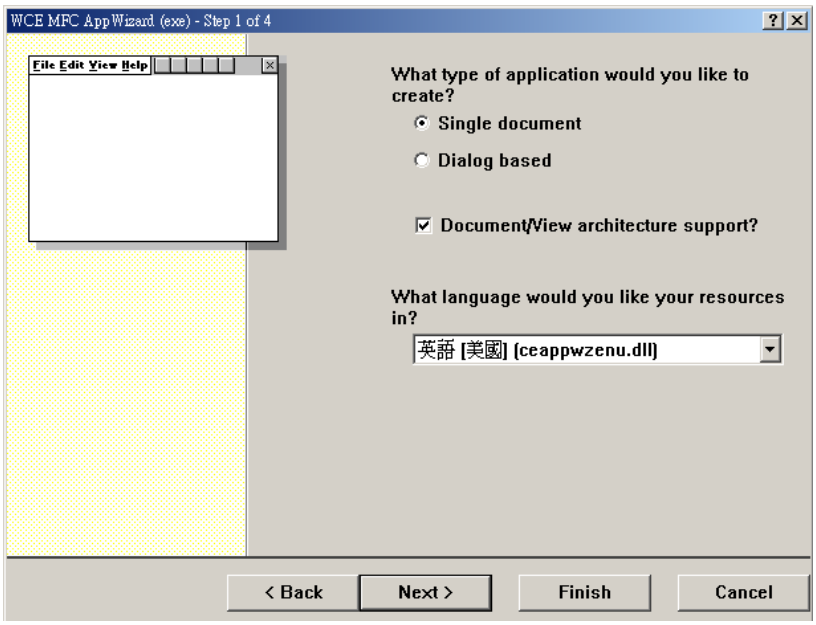

WCE MFC AppWizard (exe) - Step 1 of 4
File Edit View Help
What type of application would you like to create?
Single document
Dialog based
Document/View architecture support?
What language would you like your resources in?
英語 [美國] (ceappwzenu.dll)
< Back
Next >
Finish
Cancel

Figure 6–29: Select Single Document

Step 5: To select the functions what you need, and click **Next**.

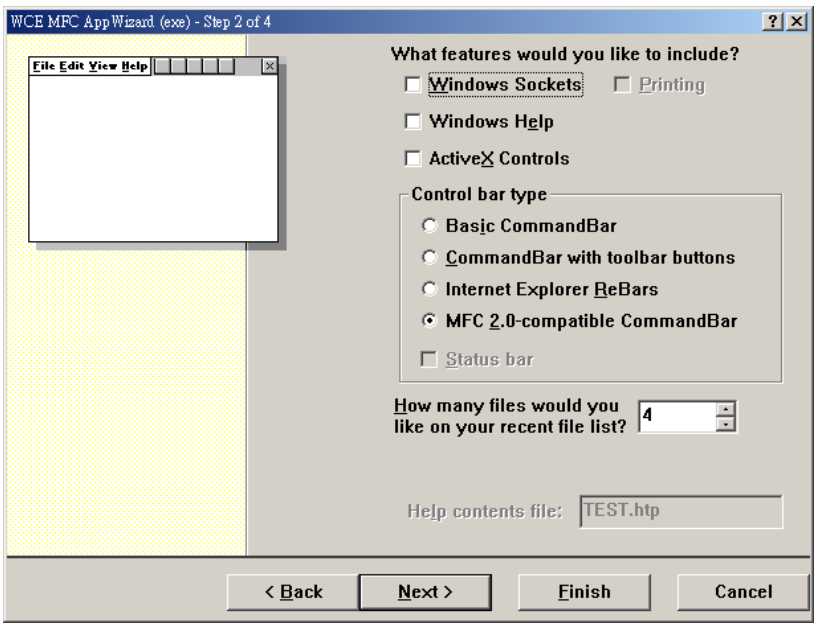


Figure 6–30: Select Required Functions

Step 6: To select the functions what you need, and click **Next**.

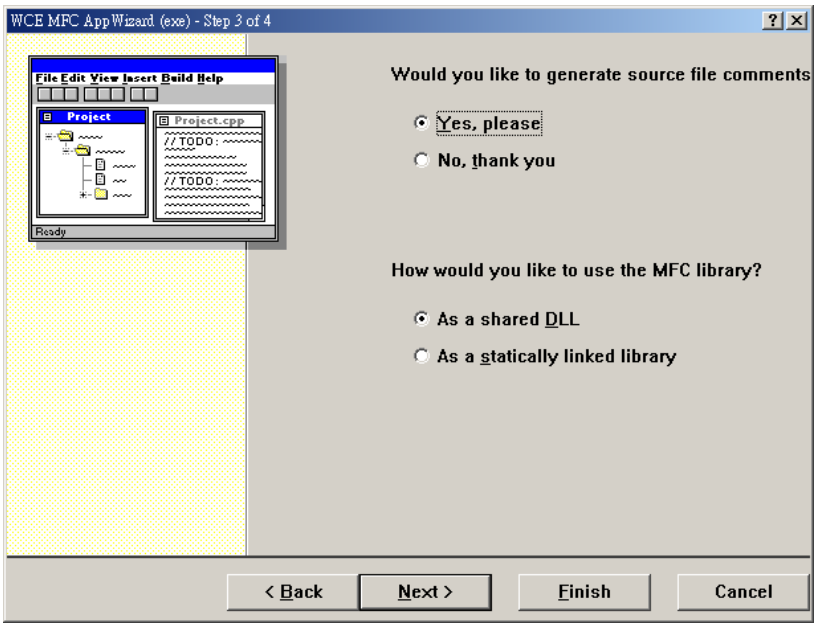


Figure 6–31: Select Source File Options

Step 7: Click **Finish**, and the following screen will appear.

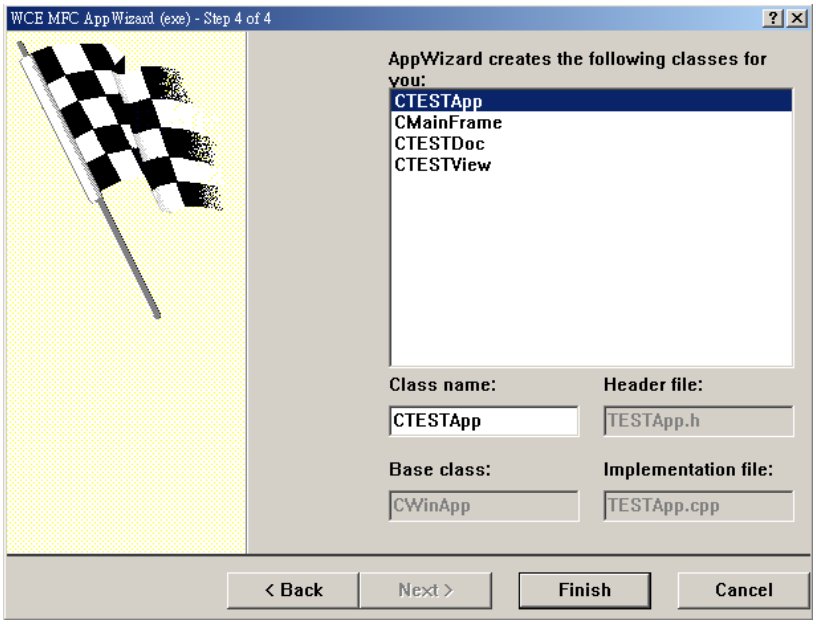


Figure 6–32: Finish Setup

Step 8: Click **OK** to create the new project.

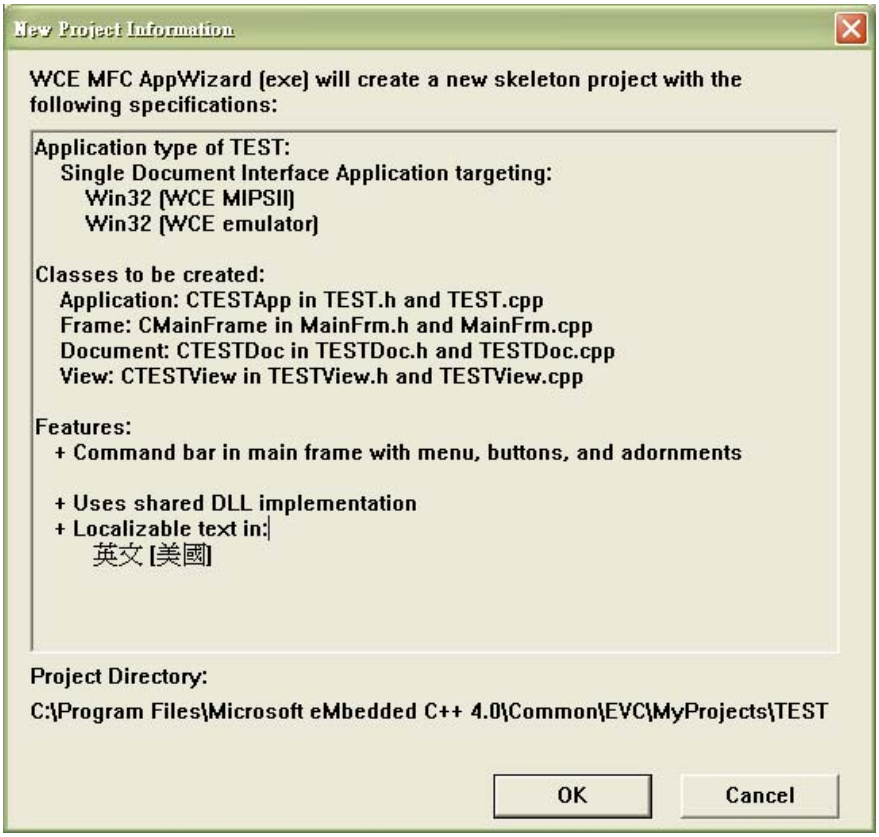

New Project Information
WCE MFC AppWizard (exe) will create a new skeleton project with the following specifications:
Application type of TEST:
Single Document Interface Application targeting:
Win32 (WCE MIPSII)
Win32 (WCE emulator)
Classes to be created:
Application: CTESTApp in TEST.h and TEST.cpp
Frame: CMainFrame in MainFrm.h and MainFrm.cpp
Document: CTESTDoc in TESTDoc.h and TESTDoc.cpp
View: CTESTView in TESTView.h and TESTView.cpp
Features:
+ Command bar in main frame with menu, buttons, and adornments
+ Uses shared DLL implementation
+ Localizable text in:
英文 [美國]
Project Directory:
C:\Program Files\Microsoft eMbedded C++ 4.0\Common\EVC\MyProjects\TEST
OK
Cancel

Figure 6–33: New Project Information

6.4.1.2 Configuration of the Platform Manager

Follow the steps below to register the device name of IMK-570. By this, IMK-570 can be specified to be a download place now. It includes the way to set up a property of the device in accordance with a communication method.

Step 1: To open the platform manager, select **Configure Platform Manager** from the **Tools** menu.

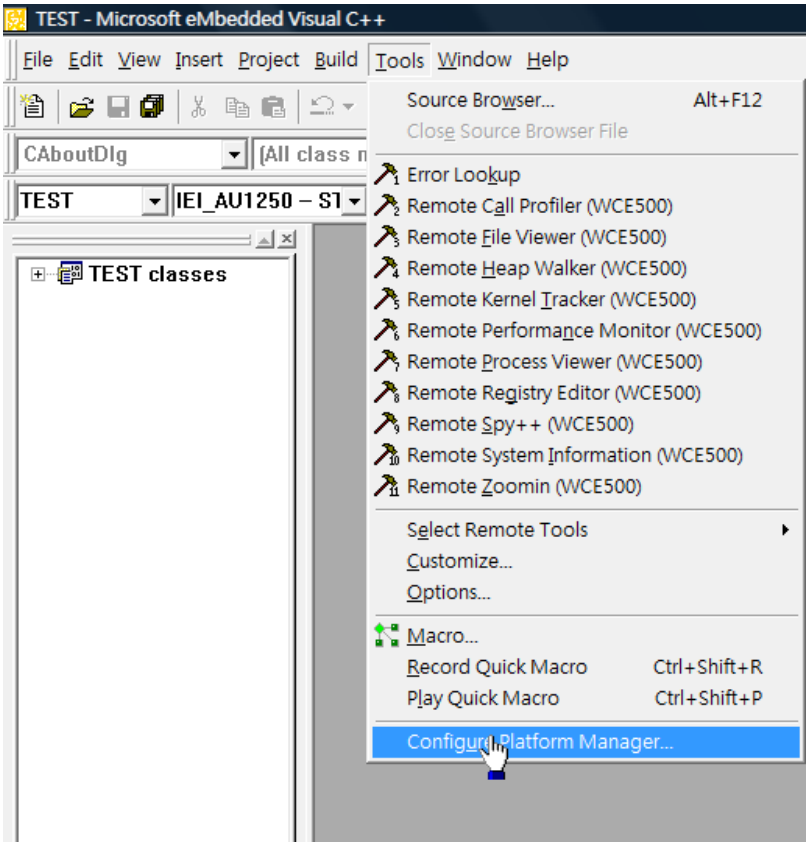


Figure 6–34: Platform Manager Configuration

Step 2: To open Device Property, select **IEI_AU1250 Device** and click **Properties**. Then select **Microsoft ActiveSync** from the [Transport] and [Starting Server] menus. Click **OK**.

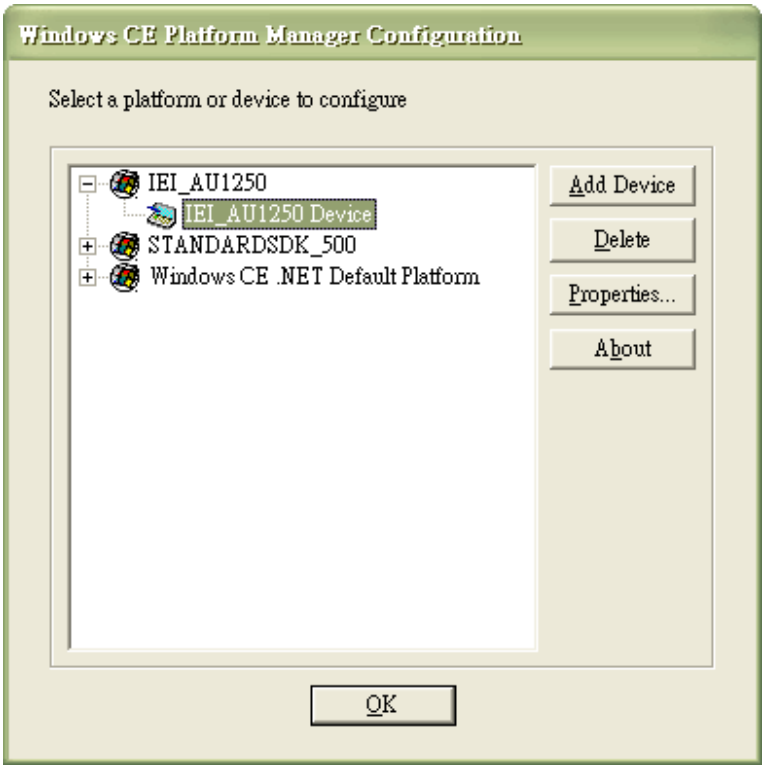


Figure 6–35: Platform Manager Configuration

Figure 6–36: Platform Manager Device Properties

Step 3: Building and Downloading a Program

Here, as an example we will create a program to display the text “Hello IMK-570!” in the center of a window. Add the following description to the OnDraw() of view class:

pDC->ExtTextOut(350, 300, NULL, NULL, TEXT(“Hello IMK-570!”), NULL);

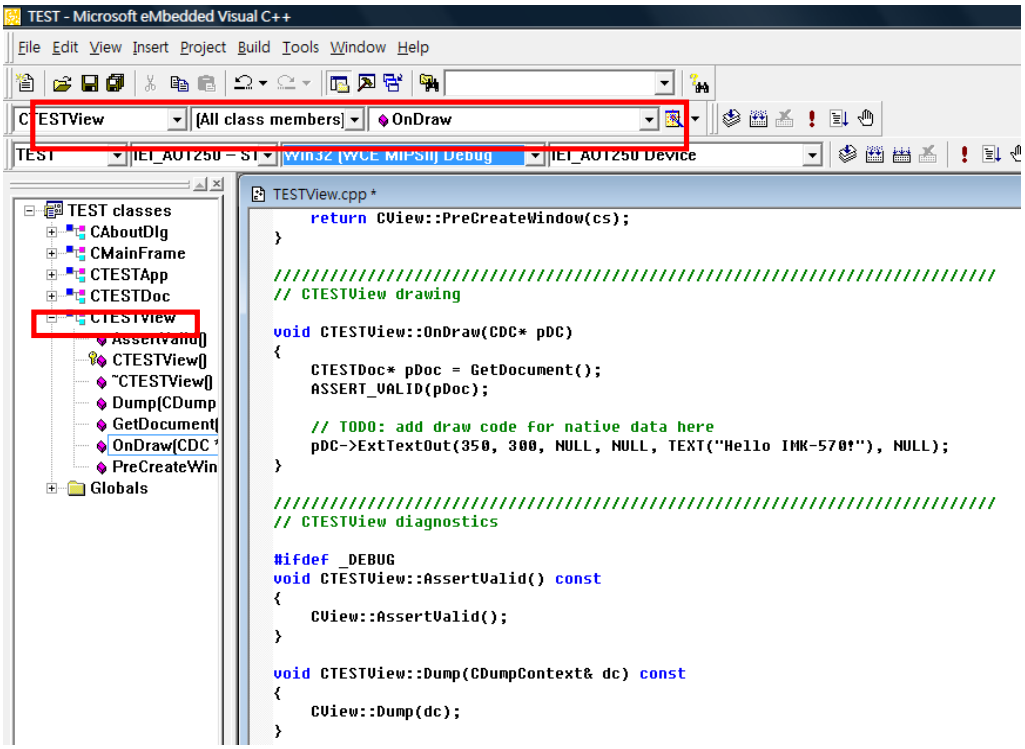


Figure 6–37: Platform Manager Example Program

When you build the program, it will be automatically downloaded to the designated device. Before executing the build process, designate the SDK and other environment to be used in this process via the options in the “Select Active WCE Configuration”, “Select Active Configuration” and “Select Default Device” pop-up menus on the [WCE Configuration] toolbar. The setting of the [WCE Configuration] toolbar will differ depending on the program’s intended use. The following three types of program building methods are explained below.

- Programs debugged using the emulator
- Programs debugged using the IEI Windows CE device
- Programs released for the IEI Windows CE device

6.4.1.3 Program Debugged Using IMK-570

Step 1: Connect the personal computer to be used for development and the IEI Windows CE device via ActiveSync.

Figure 6–38: Connect With ActiveSync

Step 2: Set the [WCE Configuration] toolbar as below, and execute the build.

Step 3: When the build completes successfully, program will be downloaded to the IEI Windows CE device automatically.

Step 4: To debug this program, start the personal computer's debugger.

6.4.1.4 Programs Released for IMK-570

Step 1: Connect the personal computer to be used for development and the IEI Windows CE device via ActiveSync.

Figure 6–39: Connect With ActiveSync

Step 2: Set the [WCE Configuration] toolbar as below, and execute the build.

Step 3: When the build completes successfully, program will be downloaded to the IEI Windows CE device automatically.

Step 4: After downloading is completed, the program will be saved in the IEI Windows CE device's [\My Device] folder.

Figure 6–40: My Device Desktop Icon

Step 5: Double click the program icon to run the program.

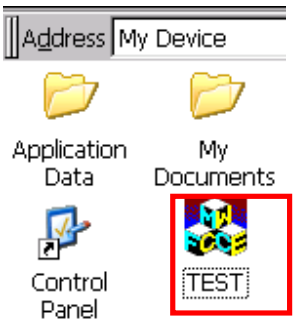


Figure 6–41: Run Test Program

6.4.1.5 Program Debugged Using the Emulator

If the application programs do not depend on this the IEI Windows CE device's original function such as the backlight and touch panel, debugging using an emulator is available.

To debug a program by the emulator, the Standard SDK for Windows® CE is necessary. When you install the eMbedded Visual C++, the Standard SDK is also installed.

Step 1: Set the toolbar as below and then execute the build.

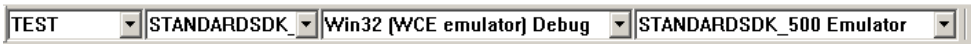


Figure 6–42: Emulator Debugging

Step 2: When the build completes successfully, the program is automatically downloaded to the emulator. If the emulator is not running, it will be launched and will load the program automatically.

Step 3: To debug this program, start the debugger.

6.4.2 Development Using Visual Studio .NET 2003

In Visual Studio .NET 2003, the program language only available is Visual Basic .NET.

To develop application programs with Visual Studio .NET 2003, it is necessary to install an add-on pack which is Windows® CE utilities for Visual Studio .NET 2003 v1.1. Visit the Microsoft® official website and download the add-on pack to the personal computer.

In case of debugging application with the IEI Windows CE device, it is required to set up the registry after installing Windows® CE utilities for Visual Studio .NET 2003 v1.1 add-on

pack and IEI SDK. Install the registry file, check for the note of [How do I debug my application on an x86-based device running Windows CE?] located in the Windows® CE utilities for Visual Studio .NET 2003 add-on Pack 1.1. After the installation, restart the personal computer for developing applications.

If you apply the settings, it is impossible to debug with the emulator simultaneously. Please refer to the release note and register the settings in case of using the emulator debugging.

Make sure you understand the release note as it contains very important information, prior to development.

It is necessary to install a component of [.NET Compact Framework] (DotNetSetup.cab) in advance when applications developed by Visual Studio .NET 2003 are run on the Windows® CE.NET unit.

The following procedure describes how to create an easy application program using Visual Studio. NET2003 for displaying a window on the screen.

6.4.2.1 Creating a Project

Step 1: Start Visual Studio .NET 2003 and select **New** from the **File** menu.

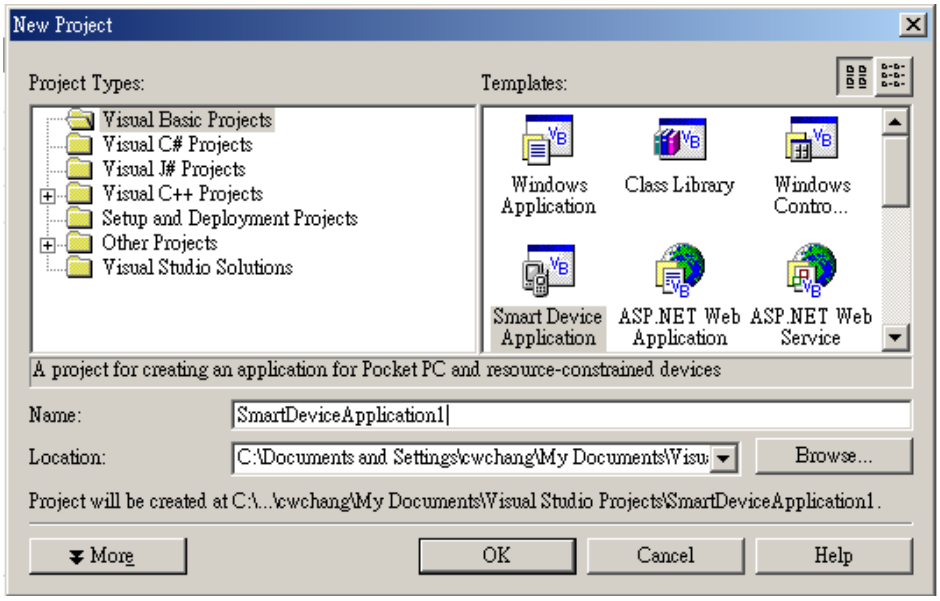


Figure 6–43: Create New Project

Step 2: Select [Visual Basic Project] as project genre. Select [Smart device Application] as template. Enter the project name and the file location. Click **OK**.

Step 3: Select Windows® CE as target platform. Then select a project type and click **OK**.

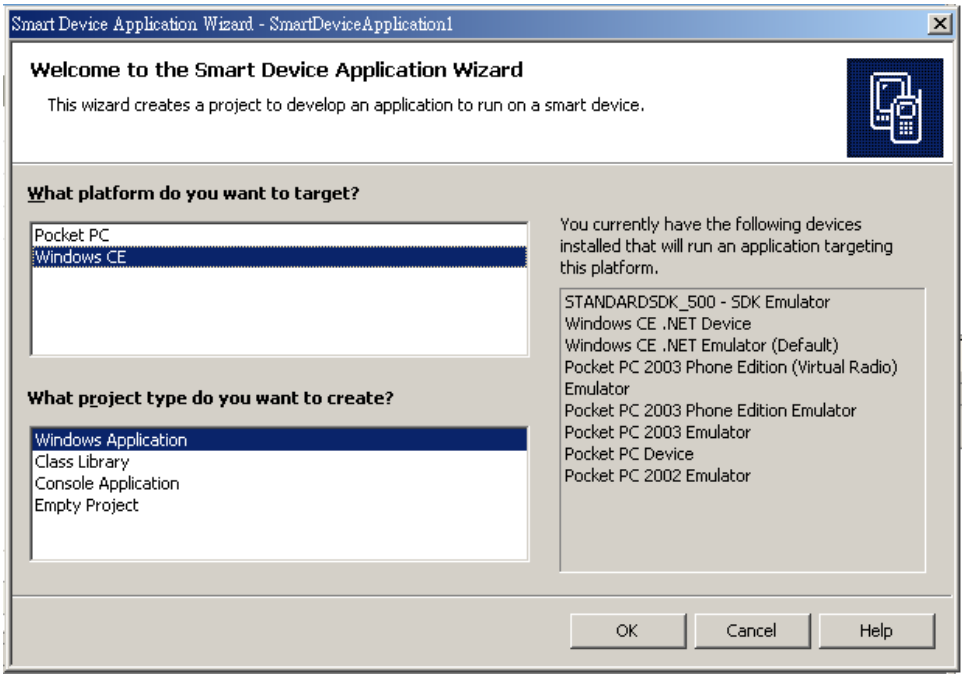

Smart Device Application Wizard - SmartDeviceApplication1
Welcome to the Smart Device Application Wizard
This wizard creates a project to develop an application to run on a smart device.
What platform do you want to target?
Pocket PC
Windows CE
You currently have the following devices installed that will run an application targeting this platform.
STANDARDSDK_500 - SDK Emulator
Windows CE .NET Device
Windows CE .NET Emulator (Default)
Pocket PC 2003 Phone Edition (Virtual Radio) Emulator
Pocket PC 2003 Phone Edition Emulator
Pocket PC 2003 Emulator
Pocket PC Device
Pocket PC 2002 Emulator
What project type do you want to create?
Windows Application
Class Library
Console Application
Empty Project
OK
Cancel
Help

Figure 6–44: Smart Device Application Wizard

Step 4: A built project is shown as below.

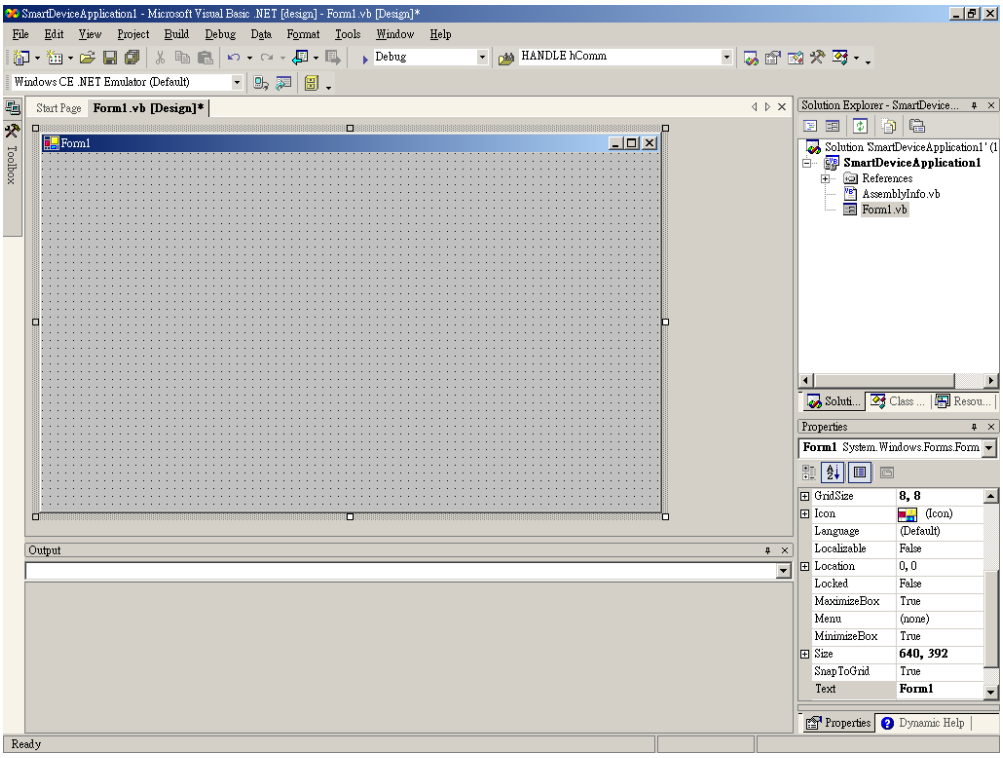


Figure 6–45: New Project Page

6.4.2.2 Building and Downloading a Program

Here, as an example we will create a program to display the text “WELLCOME” at the center of a window.

Step 1: Select a label from the toolbox, and add a label named **Label1** to the form.

Step 2: Input “WELLCOME” into the [Text] item of [Label1] property.

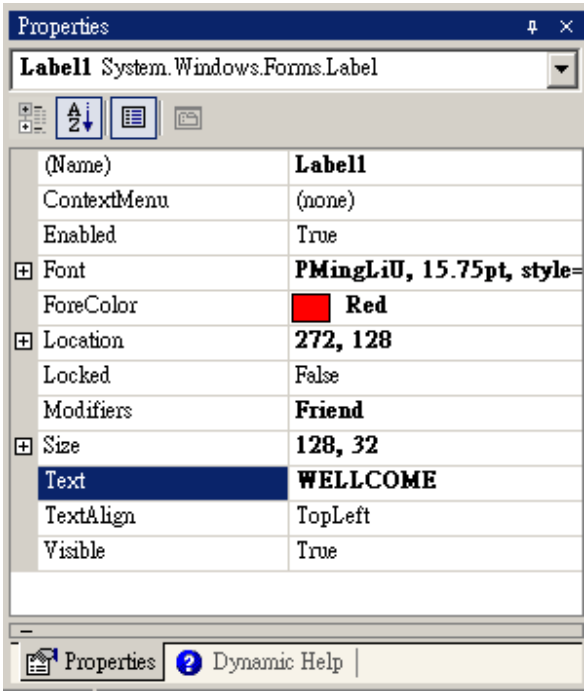


Figure 6–46: Dialog Properties

Step 3: Start to debug.

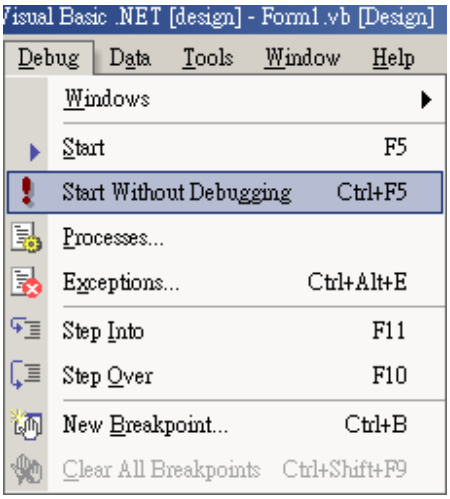


Figure 6–47: Debugging

Step 4: Before starting to debug, the following dialog will appear. You can choose to debug by an emulator and debug on the IEI Windows CE device.

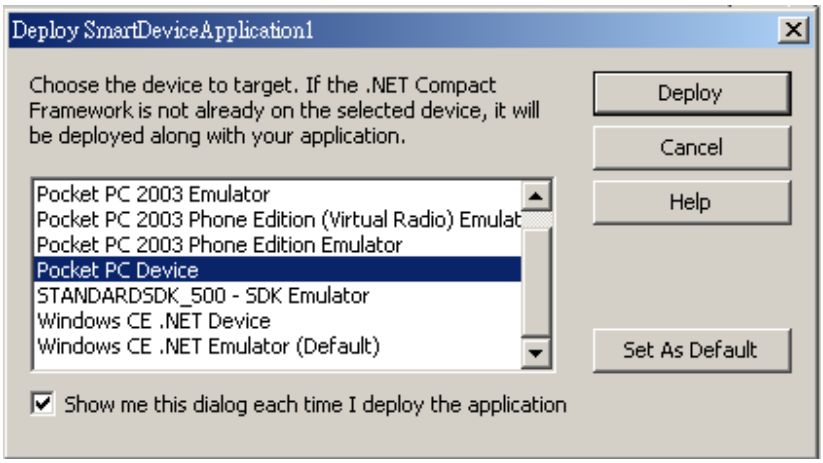

Deploy SmartDeviceApplication1
Choose the device to target. If the .NET Compact Framework is not already on the selected device, it will be deployed along with your application.
Pocket PC 2003 Emulator
Pocket PC 2003 Phone Edition (Virtual Radio) Emulat
Pocket PC 2003 Phone Edition Emulator
Pocket PC Device
STANDARDSDK_500 - SDK Emulator
Windows CE .NET Device
Windows CE .NET Emulator (Default)
Deploy
Cancel
Help
Set As Default
Show me this dialog each time I deploy the application

Figure 6–48: Select Target Device

6.4.2.3 Program Debugged Using the Emulator

If the application programs do not depend on the IEI Windows CE device's original function such as the backlight and touch panel, debugging using an emulator is available.

Before debugging starts, click **Deploy** on the dialog of [Windows CE .NET Emulator].

6.4.2.4 Program Debugged Using IMK-570

Step 1: Connect the personal computer to be used for development and the IEI Windows CE device via ActiveSync.

Step 2: Make sure the deployment device is [Windows CE.NET Device].

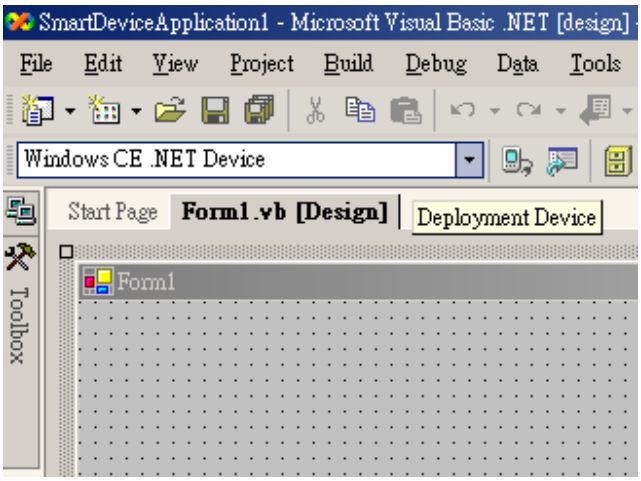


Figure 6–49: Select Deployment Device

Step 3: Click **Deploy** on the dialog of [Windows CE.NET Device].

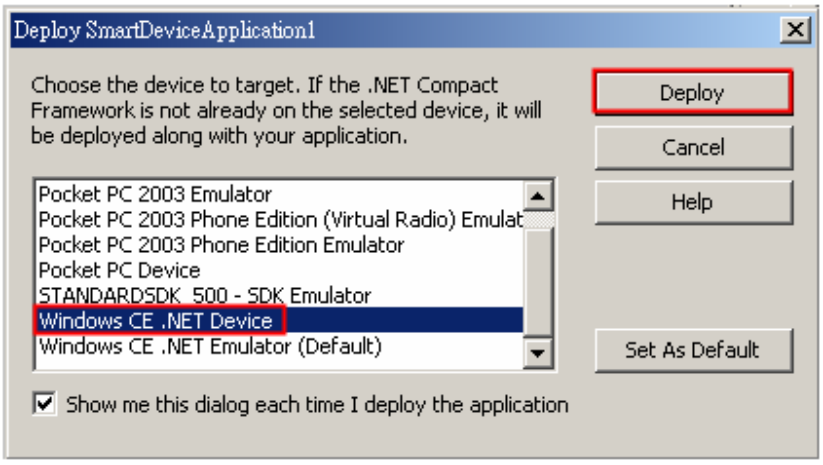

Deploy SmartDeviceApplication1
Choose the device to target. If the .NET Compact Framework is not already on the selected device, it will be deployed along with your application.
Pocket PC 2003 Emulator
Pocket PC 2003 Phone Edition (Virtual Radio) Emulat
Pocket PC 2003 Phone Edition Emulator
Pocket PC Device
STANDARDSDK_500 - SDK Emulator
Windows CE .NET Device
Windows CE .NET Emulator (Default)
Deploy
Cancel
Help
Set As Default
Show me this dialog each time I deploy the application

Figure 6–50: Select Windows CE .NET Device

Step 4: The file will be downloaded and debugging will start.

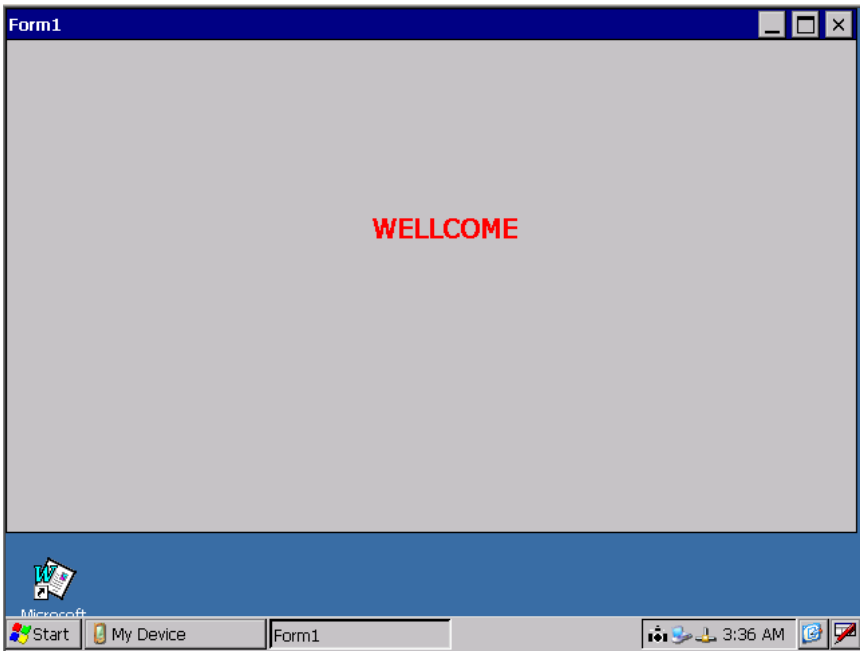


Figure 6–51: Example Program Output

Chapter

7

Control Barcode Scanner with BARControl.ocx

7.1 Method Summary

BARControl.ocx function

ReadBarCode() – Reads barcode string

7.2 Add BARControl.ocx Object in HTML

<object classid="clsid:F1AC3FFD-785B-4592-AC8D-34F358D11FDF" id="BarControl" width="0" height="0"></object>

7.3 ReadBarCode(int iLowTrigTime)

Description	Reads barcode string
Syntax	BSTR ReadBarCode(int iLowTrigTime)
Return Value	BSTR(WCHAR) returns barcode string, or "NONE" when read fails.
Parameter	iLowTrigTime: Decode time in milliseconds (when reading 2D barcodes it is recommended to set this value to 500)

Chapter

8

MSR Programming Guide for IMK-571R-CE5/MSR

8.1 Adding Keyboard Support

To add keyboard support, add the code in this section to the application.

8.1.1 *.h

```
virtual BOOL PreTranslateMessage(MSG*.pMsg);
void CheckKey(UINT nChar, UINT nRepCnt, UINT nFlags);
```

8.1.2 *.cpp

```
void CMSRDemoDlg::CheckKey(UINT nChar, UINT nRepCnt, UINT nFlags)
{
	CString strintput;
	TCHAR tcchkKeydata[64]={0};
	TCHAR tcKeydata[64]={0};
	strintput.Format(L"%c",nChar);
	int i;
	if(g_str.IsEmpty())
	{
		g_str = strintput;
	}
	else
		g_str = g_str +strintput;

	wsprintf(tcchkKeydata,L"%s",g_str);
	for( i=0;i<g_str.GetLength();i++)
	{
		if((tcchkKeydata[i]==0x11) & (tcchkKeydata[i+1]==0x4a))
		{
			memcpy(tcKeydata,tcchkKeydata+2,16);
			tcKeydata[16]=0x0;
			tcKeydata[17]=0x0;
			g_str = tcKeydata;
			CompareData(g_str);
			g_str="";
```

```
                }
        }
}
BOOL CMSRDemoDlg::PreTranslateMessage(MSG* pMsg)
{
        if(pMsg->message==WM_KEYDOWN)
        {

        CheckKey((UINT)pMsg->wParam,(UINT)pMsg->lParam,(UINT)pMsg->lParam
);
        }

        return CDialog::PreTranslateMessage(pMsg);
}
```

Chapter

9

FAQ

9.1 Why did the system hang at end of progress bar during booting?

If the system hung at the end of progress bar during booting, it might the registry in EEPROM has some problem. You can use configure file to erase registry. Change the value of offset 0x01 from 0x00 to 0x01, and then reboot. After entering Windows CE, it finished to erase registry. Then you can change the value back to 0x00.

```
;-------------------------------------------------------------------------------
   offset   value
;-------------------------------------------------------------------------------
*    0x00      [redacted]              // load registry from EEPROM
*    0x01      0x01                    // erase registry in EEPROM
*    0x02      [redacted]              // display type: 0x01 = LTM04C380K (640 x 480)
                                       //               0x0a = G104SN03   (800 x 600)
                                       //               0x0b = FG050605DNCWAG01 (320 x 234)
                                       //               0x0c = FG070060DNCWAG02 (480 x 234)

EOF
```

Figure 9–1: Setup File

9.2 How to setup system configure when change display?

The display maybe not works fine when you use other display, because the resolution of display doesn't match the system settings. The value of offset 0x02 in configure file can support different display type. You can use the configure file to change system settings for your display. For example, set the value of offset 0x02 to 0x01 when the resolution of display is 640 x 480. Set the value of offset 0x02 to 0x0a when the resolution of display is 800 x 600.

9.3 Why there' s error message when I rebuild the IMK Runtime Demo source code in the disc?

It's possible caused if you didn't install Platform Builder 5.0 in your develop environment. You can get rid of this problem by following the steps below :

A. Select 'Tools → Options' at toobar

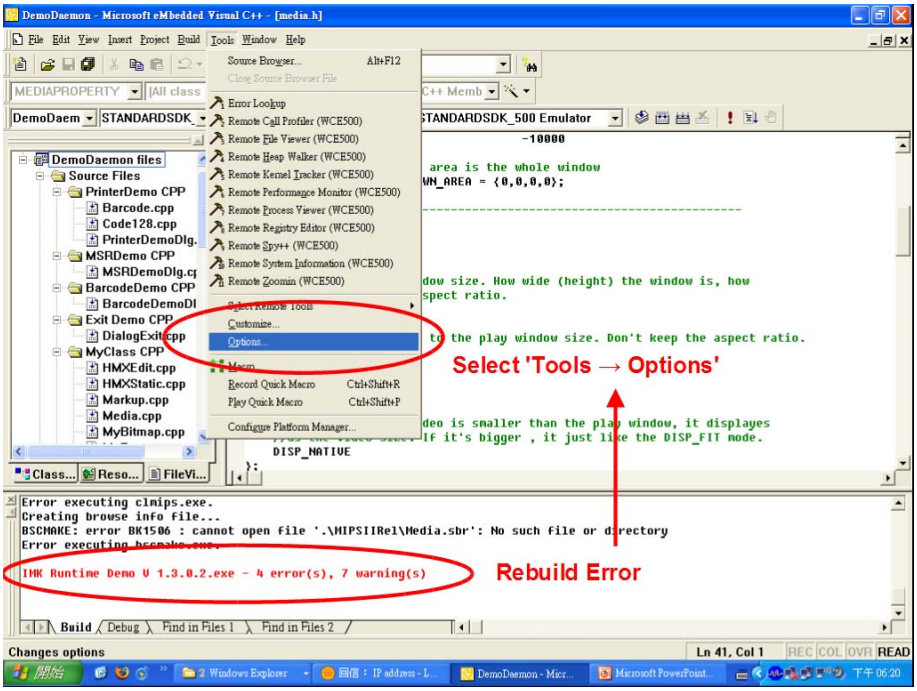

DemoDaemon - Microsoft eMbedded Visual C++ - [media.h]
Select 'Tools → Options'
Rebuild Error
Error executing clmips.exe.
Creating browse info file...
BSCMAKE: error BK1506 : cannot open file '.\MIPSIIRel\Media.sbr': No such file or directory
IMK Runtime Demo V 1.3.0.2.exe - 4 error(s), 7 warning(s)

Figure 9–1: Adding Library Step 1

B. Switch to ‘Directories’ tag, select ‘New’ icon to add a new directory

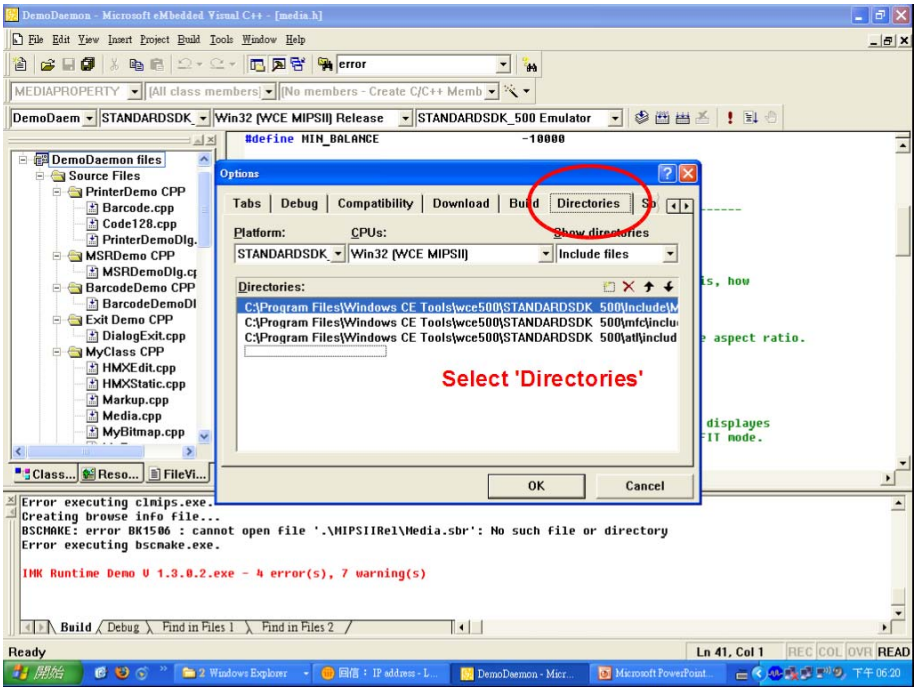


Figure 9–1: Adding Library Step 2

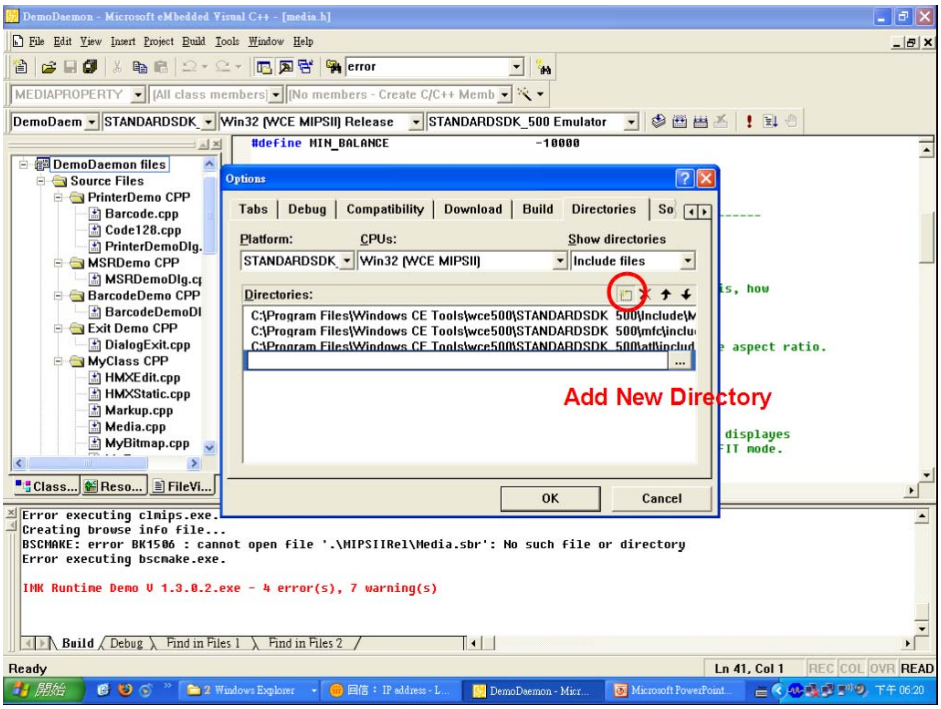


Figure 9–1: Adding Library Step 3

C. Direct the new directory to :\IMK RUNTIME DEMO\lib\

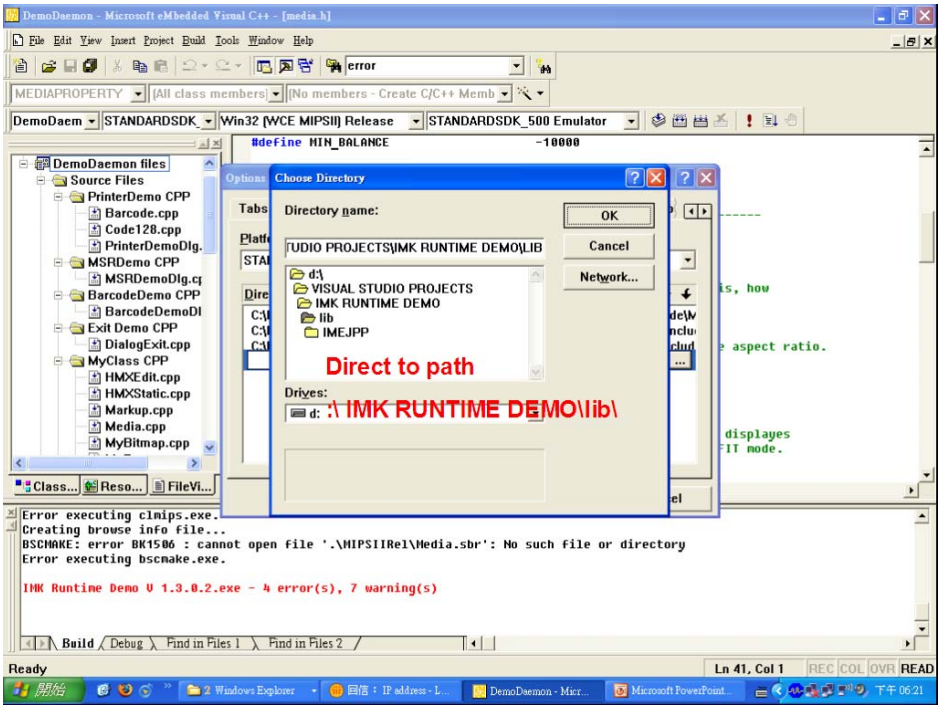


Figure 9–1: Adding Library Step 4

D. Rebuild the program … it's done!

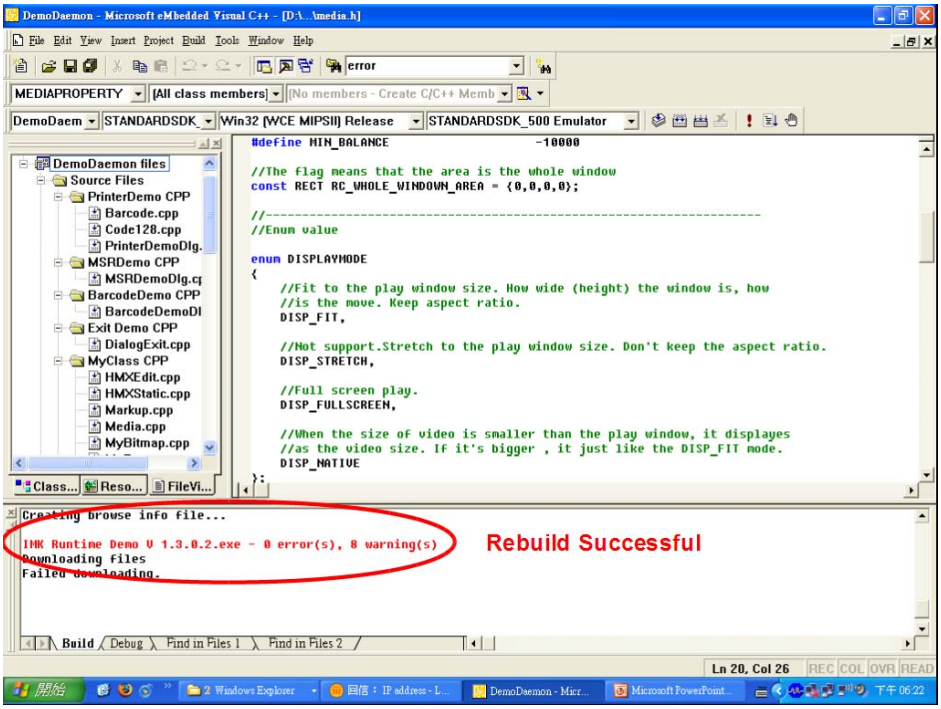


Figure 9–1: Adding Library Step 5

Appendix

A

Terminology

Download	To "get" a file or program over the network from another computer
IP (Address)	Internet Protocol is an addressing system used to uniquely identify computer on a network
Subnet	A special IP for a specific group of computers on a network. A zero indicates any number from 1-255. eg the 10.25.1.0 subnet represents all computers with an IP from 10.25.1.1 to 10.25.1.255 (The subnet IP cannot be assigned as a computer's IP address)
Sync	Compares two files or pieces of information and updates them with the missing information from the other one, so they both stay up to date.
Upload	To "send" a file or program over the network to another computer
XML	Xtensible Markup Language is a general purpose specification for creating custom markup languages. In the context of this document, the markup language contains the details of the products.
XML Server	Keeps XML files accessible to other computers on the network, allowing the other computers to upload and download files from it.